Evaluating the impact of the
Paws .b mindfulness programme on mainstream
Primary School aged pupils’ suppressing and
sustaining attention skills, and their academic
proxy measures

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George Liam Thomas

Institute of Education

Please note that throughout this account, all names and locations have
been anonymised through the use of pseudonyms.
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<tr>
<td>AAP</td>
<td>Attention Academy Program</td>
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<td>ACTeRS</td>
<td>ADD-H Comprehensive Teacher Rating Scale</td>
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<td>ADHD</td>
<td>Attention Deficit Hyperactivity Disorder</td>
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<td>ANT&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Attention Network Test</td>
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<tr>
<td>DBDRS</td>
<td>Disruptive Behaviour Disorder Rating Scale</td>
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<tr>
<td>DfE</td>
<td>Department for Education</td>
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<td>EP</td>
<td>Educational Psychologist</td>
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<td>FG</td>
<td>Focus group</td>
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<td>fMRI&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Functional Magnetic Resonance Imaging</td>
</tr>
<tr>
<td>FOFBOC&lt;sup&gt;14&lt;/sup&gt;</td>
<td>Feet on floor – bottom on chair</td>
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<tr>
<td>GCSE</td>
<td>General Certificate of Secondary Education</td>
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<tr>
<td>MAMIG</td>
<td>Melbourne Academic Mindfulness Interest Group</td>
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<tr>
<td>MBCT-C</td>
<td>Mindfulness-Based Cognitive Therapy for Children</td>
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<td>MBSR</td>
<td>Mindfulness-Based Stress Reduction</td>
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<td>MFSR</td>
<td>Mindful Family Stress Reduction</td>
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<td>MRI&lt;sup&gt;10&lt;/sup&gt;</td>
<td>Magnetic Resonance Imaging</td>
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<td>RCT</td>
<td>Randomised Control Trial</td>
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<td>RQ</td>
<td>Research question</td>
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<td>SENCo</td>
<td>Special Educational Needs Coordinator</td>
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<td>TA</td>
<td>Thematic analysis</td>
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<td>TEA-Ch</td>
<td>Test of Everyday Attention for Children</td>
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<tr>
<td>UK</td>
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<td>USA</td>
<td>United States of America</td>
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<td>WCG</td>
<td>Waitlist control group</td>
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Abstract

Few studies have evaluated the impact of mindfulness programmes on aspects of positive functioning amongst mainstream children and problems in design, sample size, and measurement are commonplace. The present study sought to address this and rigorously evaluate the impact of a 6-hour manualised mindfulness programme called ‘Paws .b’ on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and their academic proxy measures.

Two classes of Year-4 pupils (n = 30), their class teachers (n = 3), and a mindfulness teacher (n = 1) were recruited from a mixed comprehensive Primary School.

A quasi-mixed methods Randomised Control Trial (RCT) design with a quasi-experimental intervention cross-lag was used. There were four data collection time-points 6- to 8-weeks apart. Pupils and class teachers were randomly assigned to the experimental group or the waitlist control group. Experimental pupils received a 1-hour Paws .b lesson per week for 6-weeks between baseline and Time-1; waitlist control pupils received Paws .b between Time-1 and Time-2. The remaining time-points acted as the 6- to 8-week and 14-week follow-ups. Quantitative data were gathered using teacher-reported and standardised attention measures, and teacher-reported academic proxy measures. Qualitative data were gathered using post-intervention pupil focus groups (FGs) and teacher semi-structured interviews.

Within-condition comparisons revealed several significant pre- vs. post-intervention effects within the attention measures, the majority of which were maintained at one or both of the follow-ups, whereby several large estimated effect sizes were noted. Between-condition comparisons revealed a number of significant partial condition × time-point interactions within the attention measures. However, no significant effects were noted within the academic proxy measures. Positive and critically constructive evaluative themes were identified within the qualitative data.

Findings were discussed relative to mindfulness and attention literature, and further implications for school implementation and future research were outlined.
Acknowledgements

To the staff on the Doctorate in Educational and Child Psychology, I would like to thank: Jackie Chisnall, Shelley Darlington and Liam Grindell for keeping the doctorate running smoothly; Prof Kevin Woods for his wisdom and statistical support; Dr Caroline Bond for her faultless logic and practical assistance; Dr Kath Tyldesley for her neuropsychological expertise and excellent guidance during the former stages of this thesis; and, Dr Cathy Atkinson for her clear direction, quick reading, and superb supervision during the latter stages of this thesis. I would also like to thank all staff for affording me this great opportunity, with particular thanks to Dr Kath Tyldesley who, in 2009, kindly stopped to speak to me on Newton Street (Manchester) and encouraged me to apply.

I would like to thank the executive team within New Directions Educational Trust for allowing my research to be commissioned, with particular thanks to my placement supervisor for her outstanding support throughout this process.

I would like to thank the staff, pupils, and parents/ carers of Harry Close Primary Academy for their tenacity, engagement, and honesty, and for embodying this research. Without you all, the present study would simply not have been possible.

I would like to thank the member of staff at Mill Hill Primary Academy for giving up their time to allow me to pilot my measures.

Lastly, to my friends and family, I would like to thank you all for your love and support, with special thanks to my parents and girlfriend for keeping me sane.
Declaration

No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification within this or any other University or institute of learning.

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### Overview of chapters

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<td>Chapter 6</td>
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Dedication

I dedicate this thesis to my grandparents
Alfred and Margaret Hayes, and Kenneth and Muriel Thomas.
CHAPTER 1 – Introduction

The introduction chapter begins by outlining the researcher’s involvement and interest in attention. The chapter then outlines the role of the educational psychologist (EP) in research and concludes with an outline of the research that contributed to the present study.

1.1. The researcher’s involvement and interest in attention

The present study was undertaken to fulfil the requirements of the Doctorate in Educational and Child Psychology at the University of Manchester. The researcher began working full-time with children and young people in September 2009 and held the position of Higher Level Teaching Assistant within a mixed and socioeconomically deprived comprehensive Secondary School. The researcher’s mandate was to support pupils studying for their General Certificate of Secondary Education (GCSE) in English and Mathematics who were on the C-/D-grade borderline, where A*- to C-grades are Level 2 qualifications (Office of Qualifications and Examinations Regulation, 2014). The researcher was also required to work with teachers and senior leaders to improve the school’s English and Mathematics combined GCSE pass rate by implementing schemes of work created by a team of external consultants with specialist knowledge in GCSE English and Mathematics curricula.

What the researcher witnessed during the 2009/10 academic year was influential in determining their present interest in high-quality universal (or wave-1) provision and intervention for mainstream children and young people. Within the space of one academic year, the Secondary School improved their GCSE pass rate from 17% five A*- to C-grades, including English and Mathematics (i.e., significantly below the floor standard of 40%), to 49% five A*- to C-grades, including English and Mathematics (i.e., significantly above the floor standard of 40%). Thus, the researcher gained first-hand experience of the power of high-quality universal provision and intervention; the utility of schools implementing evidence-based, yet external initiatives with high levels of fidelity; and, the profound impact that such
provision and intervention was able to have on the academic progress and life outcomes of an entire cohort of mainstream children and young people. The researcher’s interest in high-quality universal provision and intervention for mainstream children and young people then heavily impacted upon their A-level teaching career which began in September 2011, and their present career as a trainee EP.

The researcher was keen to expand their skillset throughout the Doctorate in Educational and Child Psychology. Because the entirety of the researcher’s experience with children and young people prior to beginning the doctorate was within Secondary School or post-16 settings, the researcher welcomed the opportunity to work with children and young people in Primary School settings during professional practice placements. It was these early experiences as a trainee EP that led the researcher to develop an interest in attention: specifically, the components of attention that mainstream Primary School aged children use most frequently; the components of attention that the Primary School curriculum makes most demands on; and, the means by which mainstream Primary School aged pupils’ attentional skills could be improved. An opportunity then arose for the researcher to rigorously evaluate the impact of a universal intervention programme on mainstream Primary School aged pupils’ attention.

1.2. The role of the EP in research
Woods (2012) suggests that EPs’ summative function is to ‘provide, more or less formally, expert assessment of children’s and young people’s needs and linking this to patterns of educational provision and placement’, whereas their formative function is to ‘support actively the development of provision for children and young people that are appropriate to their needs and which improve outcomes for them’ (p. 256). Further to this, Cameron (2006) suggests that the role of the EP includes five factors: a psychological perspective; uncovering mediating variables; unravelling problem dimensions; evidence-based recommendations; and, promoting big ideas.
Hence, it can be suggested that the researcher’s opportunity to evaluate the impact of a universal intervention programme on mainstream Primary School aged pupils’ attention was firmly grounded in the role of the EP: specifically, Woods’ (2012) summative function in terms of linking children and young people’s needs to patterns of educational provision; Woods’ (2012) formative function in terms of developing provision for children and young people which improves outcomes for them; and, Cameron’s (2006) notion of evidence-based recommendations and promoting big ideas.

1.3. Research that contributed to the present study
Between January and May 2013 during their first year of doctorate study, the researcher undertook their Assignment 1 pilot study within Green Plane Council (North West, England; Thomas, 2013), which acted as a pilot to the present study. The researcher’s Assignment 1 pilot study used a single embedded case study design to answer the following research questions (RQs):

RQ1. Which attentional components do Special Educational Needs Coordinators (SENCos) consider are most used by mainstream Primary School aged pupils?

RQ2. On which components of mainstream Primary School aged pupils’ attention do SENCos consider the primary National Curriculum makes most demands?

Four Primary SENCos were recruited and a single focus group (FG) was held, prior to which the researcher oriented the SENCos to the five attentional components: suppressing attention; sustaining attention; focusing attention;

1 The researcher’s Assignment 1 pilot study consisted of a 10,000 word research report undertaken during the researcher’s first year of doctorate study. The generic title of Assignment 1 was, ‘The social and ecological context of children’s learning’, whereby the researcher chose to investigate teacher perceptions and their interactions as their broad areas of focus.

Subsequent thematic analysis (TA) of the FG transcript revealed a high degree of congruence, in that the same two attentional components were found to be most used by mainstream Primary School aged pupils, and most demanded by the primary National Curriculum: suppressing and sustaining attention. Upon highlighting the relevance of pupils’ suppressing and sustaining attention skills within the classroom, Das (2002) states that suppressing attention allows pupils to inhibit or suppress their attention towards superfluous stimuli and thus direct their attention towards target stimuli presented by the teacher, whereas sustaining attention allows pupils to continue directing their attention towards target stimuli presented by the teacher.

Hence, the rationale for the present study originated from the researcher’s desire to extend the findings of their Assignment 1\(^1\) pilot study and explore how to improve mainstream Primary School aged pupils’ suppressing and sustaining attention skills within the classroom. However, due to a change of placement, the present study took place within New Directions Educational Trust during the researcher’s second and third years of doctorate study.

(Please note that throughout this account, all names and locations have been anonymised through the use of pseudonyms.)
CHAPTER 2 – Literature review

The literature review chapter begins with a brief discussion of the five attentional components relevant to the researcher’s Assignment 1\(^1\) pilot study (Thomas, 2013), before outlining a neuropsychological model of attention which underpins the approach adopted within the present study. The attention context is then set in order to establish the relevance of attentional research to EPs’ practice. Two broad methods of attentional improvement are also discussed, before moving onto the mindfulness literature.

An overview of mindfulness is provided and cognitive models of mindfulness are discussed. Furthermore, the relevance of mindfulness to both education and educational psychology is established. Following this, the researcher reviews literature pertaining to the effects of mindfulness on attention and provides an overview of the neuroscience of mindfulness, before discussing the training of mindfulness teachers. Lastly, the knowledge gap and ‘closest match’ study, relevant to the present study, are highlighted, leading to the articulation of the present study’s aim and RQs, the utility of the present study, and its expected contribution.

2.1. Literature relevant to Assignment 1\(^1\) pilot study

In order to contextualise the researcher’s Assignment 1\(^1\) pilot study (Thomas, 2013), the following section begins by briefly discussing the five attentional components.

2.1.1. Five attentional components

As mentioned in Section 1.3., there are five attentional components: suppressing attention; sustaining attention; focusing attention; shifting attention; and, divided attention (see Anderson et al., 2002; Das, 2002; Goldhammer et al., 2007; Lezak et al., 2004; Manly et al., 1999; Mirsky et al., 1991; Petersen & Posner, 2012; Posner & Petersen, 1990; ; Shapiro, Morris, Morris, Flowers & Jones, 1998; Strauss et al., 2000; Stuss et al., 1995).
Mirsky et al. (1991) used a sample of both adult and child participants, and got them to complete a battery of neuropsychological tests. Using principal components analyses, Mirsky et al. (1991) identified three attentional components which they called sustaining attention, focusing attention, and shifting attention, whereby Mirsky et al.’s (1991) definitions of these components feature directly in Table 1. Furthermore, sustaining, focusing, and shifting attention were identified in identical or similar forms by Lezak et al. (2004), Petersen and Posner (2012), Posner and Petersen (1990), and Stuss et al. (1995), thus providing evidence of construct validity.

Furthermore, Stuss et al. (1995) analysed the cognitive processes that take place during the completion of different neuropsychological tasks and, in addition to sustaining, focusing, and shifting attention, they identified suppressing and divided attention, whereby Stuss et al.’s (1995) definition of divided attention features directly in Table 1. However, as the researcher deemed Stuss et al.’s (1995) definition of suppressing attention to be too abstract, they replaced it with Anderson et al.’s (2002) definition which features directly in Table 1.

Hence, working definitions of the five attentional components are presented in Table 1:
Table 1. Working definitions of the five attentional components

<table>
<thead>
<tr>
<th>Attentional component</th>
<th>Definition</th>
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<tr>
<td>Suppressing attention</td>
<td>The ability to inhibit prepotent responses, or to suppress impulsive responses</td>
</tr>
<tr>
<td>Sustaining attention</td>
<td>The capacity to maintain focus and alertness over time, or vigilance</td>
</tr>
<tr>
<td>Focusing attention</td>
<td>The ability to select target information from an array for enhanced processing</td>
</tr>
<tr>
<td>Shifting attention</td>
<td>The ability to change attentive focus in a flexible and adaptive manner</td>
</tr>
<tr>
<td>Divided attention</td>
<td>When two or more tasks have to be carried out at the same time</td>
</tr>
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</table>

With reference to the researcher’s desire to explore how to improve mainstream Primary School aged pupils’ suppressing and sustaining attention skills within the classroom, their working definitions are of particular relevance to the present study.

2.2. A neuropsychological model of attention

Attention “is the process by which certain information is selected for further processing and other information is discarded” (Ward, 2006; p. 130), and is characterised by its limited capacity and responsivity to both sensory (i.e., auditory and visual) and semantic stimulus characteristics (Lezak, Howieson & Loring, 2004).

Luria’s (1973) neuropsychological model of attention postulates two parallel attentional systems: the Reflexive Attentional System; and, the Volitional Attention System. The Reflexive Attentional System responds to environmental stimuli that are biologically meaningful, whereby higher-order
cognition is not required for its efficient functioning, whereas the Volitional Attentional System is characterised by individuals’ interpretations of environmental stimuli, whereby higher-order cognition is required for its efficient functioning (see also Leclercq, 2002). It is widely accepted that attentional skills improve with age (for example, see Cooley & Morris, 1990), with Luria (1973) stating that the Reflexive Attentional System is present from early infancy, with the Volitional Attentional System emerging later in childhood. Ruff and Rothbart (1996) also identified an interactional process, whereby neural substrates dictate potential attentional development throughout infancy and childhood, and environmental input dictates the extent to which children’s underlying attentional potential is realised.

Thus, as it was the researcher’s desire to extend the findings of their Assignment 1 pilot study (Thomas, 2013) and explore how to improve mainstream Primary School aged pupils’ suppressing and sustaining attention skills within the classroom, it was necessary to adopt a neuropsychological approach within the present study. Thus, the researcher theorised that enhanced environmental input within the classroom could engender Primary School aged pupils’ underlying attentional potential and improve their suppressing and sustaining attention skills. However, as the definitions of suppressing and sustaining attention pertain only to Luria’s (1973) Volitional Attentional System (see Table 1), any future discussion of attention is with reference to volitional attention and not reflexive attention.

2.2.1. **Rationale for adopting a neuropsychological approach within the present study**

MacKay (2005) offers a rationale for the researcher’s use of a neuropsychological approach within an educational setting, in that ‘neuropsychology should not be seen as a specialist ‘bolt-on’ area within educational psychology, but rather as part of the essential knowledge and practice base required for the effective delivery of EP services’ (p. 7). MacKay (2005) also suggests that there has been an ‘increase in awareness of the neuropsychological correlates of the difficulties with which EPs work’ (p. 8), e.g., attentional difficulties, and highlights that
neuropsychological approaches allow EPs to more readily focus on the ‘provision of services to all children and young people and not just those with special needs’ (p. 15).

Furthermore, within practice-based educational psychology research at the University of Manchester, there is a heritage of adopting neuropsychological approaches within educational settings, in that Davis’ (2010) thesis research focussed on the development of a consultation model for EPs that was grounded in mindfulness, whilst Skelton (2012) developed a card-based working memory training programme called ‘MeeMo’.

2.3. The attention context
There is relatively high prevalence of attentional difficulties amongst children and young people in the United Kingdom (UK), with Ford, Goodman and Meltzer (2003) reporting that 3.62% of boys and 0.85% of girls in the UK have Attention Deficit Hyperactivity Disorder (ADHD), with many cases persisting into adulthood (Lara et al., 2009). Attentional difficulties in children and young people, such as ADHD, are also associated with peer rejection and low self-esteem (Klassen, Miller & Fine, 2004), as well as social anxiety and stress (Elkins, Malone, Keyes, Iacono & McGue, 2011). Furthermore, there is a significant economic burden associated with attention problems in children and young people. For example, ADHD is associated with higher rates of arrest and imprisonment (Mannuzza, Klein & Moulton, 2008).

Upon establishing the relevance of attentional research to EPs’ practice, there is a body of contemporary research within the educational psychology community which suggests that impoverished environmental input within the classroom can prevent Primary School aged children from realising their underlying attentional potential (for example, see Ruff & Rothbart, 1996; Schweizer, Moosbrugger & Goldhammer, 2005), which may then compromise their cognitive development and academic progress (for example, see Bledsoe, Semrud-Clikeman & Pliszka, 2010; Breslau et al.,

Hence, the researcher’s desire to explore how to improve mainstream Primary School aged pupils’ suppressing and sustaining attention skills within the classroom is both of educational importance, and of relevance to EPs. Furthermore, the researcher assimilated the above literature and theorised that enhanced environmental input within the classroom could engender Primary School aged pupils’ underlying attentional potential and improve their suppressing and sustaining attention skills, which, in turn, could improve pupils’ academic progress.

2.4. **Attention training vs. attention state training**

Petersen and Posner (2012) highlight the potential for attentional skills to be improved and suggest that there are two broad methods of attentional improvement: attention training (i.e., practise using a particular attentional network; Tang & Posner, 2009); and, attention state training (i.e., practise using forms of meditation to alter the neural state in a way that improves attention; Tang & Posner, 2009). Given the scope of the present study, it was not feasible for the researcher to evaluate the impact of attention training and attention state training on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and their academic progress. Hence, the researcher decided to focus on attention state training as opposed to attention training.

2.4.1. **Rationale for selecting attention state training over attention training**

In terms of the rationale behind the researcher’s decision to focus solely on attention state training, Tang and Posner (2009) assert that, whilst there are few examples of children receiving either form of training, attention training has been largely developed in the United States of America (USA) and Europe, and attention state training has been largely developed in Asia. Hence, the researcher felt that there would be a
greater knowledge gap pertaining to the use of attention state training with Primary School aged pupils within the UK context, particularly given the eastern origins of attention state training. Furthermore, Tang and Posner (2009) highlight that the focus of attention training is to use cognitive tasks to practise using particular attentional networks, whereas the focus of attention state training is for experiences, such as mindfulness, to effect the mind and improve performance. Hence, the researcher felt that the experiential basis of attention state training would better lend itself to being applied to Primary School aged pupils in the UK context, particularly given the prominence of experiential learning within the primary National Curriculum (Department for Education; DfE, 2013).

2.4.2. **Rationale for selecting mindfulness over other forms of meditation**

In terms of the rationale behind the researcher’s decision to focus solely on mindfulness as one of the many forms of meditation (for example, see Nash & Newberg, 2013), upon beginning their employment at the New Directions Educational Trust, it quickly became apparent that it was moving towards becoming a mindfulness trust, in that a well-established 9-week manualised mindfulness programme for teenagers called ‘.b for teens’ (Mindfulness in Schools Project, 2013b) was already being delivered throughout two of the trust’s Secondary Schools and the trust’s Sixth Form College (for evaluations of the .b for teens mindfulness programme, see Huppert & Johnson, 2010, and Kuyken et al., 2013). It also became known to the researcher that two teachers from Harry Close Primary Academy, an ethnically diverse and mixed comprehensive Primary School within the trust, were going to be trained by the Mindfulness in Schools Project to deliver their new 6-week manualised mindfulness programme for Primary School aged pupils called ‘Paws .b’ (Mindfulness in Schools Project, 2013a).

Hence, the researcher decided to undertake the present study within Harry Close Primary Academy and evaluate the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils’
suppressing and sustaining attention skills, and their academic proxy measures, within the UK context, and to ascertain pupil and teacher views about the usefulness of Paws .b.

The rationale behind the researcher’s decision to utilise the term ‘academic proxy measures’ was as follows. Firstly, proxy measures or proxy variables are defined as ‘measurable variable[s] that [are] used in place of...variable[s] that [can not] be measured’ (Upton & Cook, 2008). Secondly, given the inclusive nature of mainstream education and the imperative for assessment procedures to be as equitable as possible (see Frederickson & Cline, 2009), Primary Schools use a number of variables to measure different aspects of pupils’ academic progress, including National Curriculum levels of progress (DfE, 2013), quality of work produced in class, and in-class engagement. Hence, there is no one variable which can be used to measure academic progress, meaning that any measures of academic progress are ultimately proxy measures.

2.5. **Mindfulness literature review**

Following the researcher’s decision to evaluate the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and their academic progress, it was necessary to conduct a systematic review of mindfulness literature.

2.5.1. **Systematic literature review strategy**

The systematic literature review strategy used within the present study is as follows:

- A search of the following databases was undertaken in August 2013 and November 2014: Applied Social Sciences Indexes and Abstracts; British Education Index; CERUKplus; International Education Research Database; Australian Education Index; Education: A SAGE Full-Text Collection; ERIC; EvidenceNet; PsycInfo; and Web of Knowledge;
• The search items used were: ‘attention state training’; ‘mindfulness AND children’; ‘mindfulness AND school*’; and ‘mindfulness AND attention*’;

• The researcher applied the inclusion and exclusion criteria detailed in Table 2, which revealed 47 studies. Reference harvesting was also used.
Table 2. Systematic literature review inclusion and exclusion criteria

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
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<tr>
<td>• Journals written in English;</td>
<td>• Books, dissertations, and conference materials;</td>
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<tr>
<td>• Peer reviewed journals;</td>
<td>• Studies of reflexive attention;</td>
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<tr>
<td>• Journals written since 1990;</td>
<td>• Studies investigating other cognitive functions as well as attention;</td>
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<tr>
<td>• Studies investigating volitional attention;</td>
<td>• Studies using participants with ADHD without a focus on attentional improvement;</td>
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<tr>
<td>• Studies investigating the use of mindfulness, or mindfulness meditation, with children/ in schools;</td>
<td>• Studies using participants who belong to other clinical groups;</td>
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<tr>
<td>• Studies investigating the effects of mindfulness, or mindfulness meditation, on attention (behavioural observations);</td>
<td>• Studies investigating the effects of mindfulness on wellbeing;</td>
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<tr>
<td>• Studies investigating the effects of mindfulness, or mindfulness meditation, on attention (neural observations).</td>
<td>• Studies investigating art- or yoga-based mindfulness approaches;</td>
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<td>• Studies measuring electrophysiological output;</td>
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<td>• Studies prescribing medication in combination with mindfulness;</td>
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<td>• Studies investigating mindfulness and other psychological interventions;</td>
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<td></td>
<td>• Studies using mindfulness as family therapy;</td>
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<td></td>
<td>• Studies using intensive interventions that could not be replicated in school;</td>
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<tr>
<td></td>
<td>• Studies using ecologically/ chronologically invalid, inappropriate, or single gender participant samples.</td>
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</table>
Of the studies revealed by the systematic literature review and reference harvesting, the majority pertained to the effects of mindfulness on adults’ or children’s attention according to behavioural observations. However, a minority of the studies pertained to the effects of mindfulness on adults’ attention according to neural observations, whereby these neuroscience studies were included within the literature review because of the researcher’s adoption of a neuropsychological approach within the present study.

2.6. The mindfulness context

The following section begins with an overview of mindfulness and a discussion of two cognitive models of mindfulness, before establishing the relevance of mindfulness to both education and educational psychology.

2.6.1. An overview of mindfulness

Mindfulness has its origins in many cultural, contemplative, and philosophical traditions, particularly Buddhism which contains many principles and practices based on mindfulness (Kabat-Zinn, 2000), and is defined as ‘the awareness that emerges through paying attention on purpose, in the present moment and non-judgementally’ (Kabat-Zinn, 2003, p. 45). Kostanski and Hassed (2008) suggest that by doing so, one becomes more mindful of being and less mindful of doing and reacting. Kostanski and Hassed (2008) present mindfulness as a skill that is able to be both taught and learnt, and which ‘ideally becomes an aspect of lifelong practice and a process that remains within the power of the individual to initiate and/ or utilise’ (p. 16). Hence, mindfulness is both an outcome (i.e., mindful awareness) and a process (i.e., mindful practice; Shapiro, 2009).

Mindfulness first came to the attention of the scientific community in the 1980s when Jon Kabat-Zinn began utilising mindfulness-based approaches in healthcare settings to help patients manage chronic pain, resulting in the development of a psychotherapeutic practice called
Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1984). Many of the latter applications of mindfulness took place within health environments (for example, see Hassed, 2002, 2004; Kabat-Zinn, 1990a, 2005; Sommer & Hassed, 1995) and when applied to education have centred predominantly on undergraduate students (for example, see Shapiro, Schwartz & Bonner, 1998). Mindfulness is also a large component of several other psychotherapeutic practices (Martin, 1997), including Mindfulness-Based Cognitive Therapy (Segal, Williams & Teasdale, 2002), dialectical behaviour therapy (Linehan, 1993), and acceptance and commitment therapy (Bach & Hayes, 2002; Hayes, Strosahl & Wilson, 1999).

Typically, mindfulness practices include breathing exercises (where practitioners sustain their attention on the sensation of breathing), body scan exercises (where practitioners sustain their attention on different areas of the body), movement exercises (where practitioners sustain their attention on the sensation of moving), and listening exercises (where practitioners sustain their attention on sounds), all whilst always ensuring that one suppresses their attention towards intrusive thoughts/ judgements/ mind wanderings (Williams & Penman, 2011). As Greenberg and Harris (2012) conclude, ‘although different [mindfulness] techniques have different goals, they share a focus on sharpening concentration or attention’ (p. 162).

2.6.2. **Cognitive models of mindfulness**

2.6.2.1. **The link between mindfulness and attention**

Upon examining Kabat-Zinn’s (2003) definition of mindfulness (see Section 2.6.1.), the Melbourne Academic Mindfulness Interest Group (MAMIG; 2006) identified a number of related cognitive processes. Specifically, ‘paying attention’ requires the monitoring of cognitive processes, i.e., metacognition; paying attention ‘on purpose, in the present moment’ requires the purposive direction of one’s attention towards the experience of being in the present
moment (which the researcher suggests requires sustaining attention towards being in the present moment); and paying attention on purpose, in the present moment ‘and non-judgementally’ requires one to detect and notice our cognitive and emotional experiences without engaging with or evaluating them (which the researcher suggests requires suppressing attention towards engaging with or evaluating cognitive and emotional experiences). Hence, it can be suggested that whilst the MAMIG (2006) suggest that mindfulness is a skill that involves metacognition (see Holas & Jankowski, 2013), the researcher and others assert that mindfulness is a skill that also involves suppressing and sustaining attention (see Bishop et al., 2004; Lutz, Slagter, Dunne & Davidson, 2008).

Further to this assertion, Ruocco and Direkoglu (2013) established a positive correlation between adults’ scores on the Philadelphia Mindfulness Scale (Cardaciotto, Herbert, Forman, Moitra & Farrow, 2008) and their performance on the Continuous Performance Test II (Conners, 2000), which requires both suppressing and sustaining attention.

2.6.2.2. Holas and Jankowski’s (2013) metacognitive model of mindfulness
Holas and Jankowski (2013) proposed a metacognitive model of mindfulness (see Figure 1). Beginning at the top of Holas and Jankowski’s (2013) model, they suggest that situational and personality factors are relatively fixed. Hence, mindfulness training serves as an independent variable which impacts upon one’s metacognitive system promoting mindfulness, as mindfulness training teaches one to simultaneously monitor an object of cognition (e.g., breathing) and the cognitive process itself (i.e., sustaining attention towards being in the present moment and suppressing attention towards engaging with or evaluating cognitive and emotional experiences). One’s metacognitive system promoting mindfulness, in turn, improves the general level of one’s executive
functions and one’s attentional processes (specifically one’s suppressing and sustaining attention skills).

Hence, at a cognitive level, Holas and Jankowski (2013) elude to the fact that mindfulness training impacts upon one’s metacognitive system promoting mindfulness which, in turn, should improve the general level of one’s executive functions and one’s attentional processes (specifically one’s suppressing and sustaining attention skills), in that executive functions and attentional processes are both highly involved in the various cognitive aspects of mindfulness, i.e., meta-awareness; basic awareness; and, tacit monitoring (see also Brown, Ryan & Creswell, 2007). Holas and Jankowski (2013) then go on to state that ‘formally conducted mindfulness training is probably the best established and most effective way of forming [one’s] metacognitive system promoting mindfulness’ (p. 239). (See also Jankowski & Holas, 2014.)
2.6.2.3. **Bishop et al.’s (2004) two component cognitive model of mindfulness**

Bishop et al. (2004) proposed a two component cognitive model of mindfulness: the first component involves the self-regulation of attention on immediate experience; and, the second component involves the adoption of a curious, open, and accepting orientation towards one’s experiences.
In terms of the self-regulation of attention on immediate experience component, Bishop et al. (2004) propose that mindfulness requires one to maintain awareness of current experience so that sensations, feelings, and thoughts can be detected as they appear in conscious awareness (i.e., sustaining attention towards current experiences). Bishop et al. (2004) then go on to propose that inhibition is required to bring one’s attention back onto current experience once a sensation, feeling, or thought has been detected in order to prevent the ‘secondary elaborative processing of the thoughts, feelings, and sensations that arise in the stream of consciousness’ (p. 233; i.e., suppressing attention towards sensations, feelings, or thoughts).

In terms of the adoption of a curious, open, and accepting orientation towards one’s experiences, Bishop et al. (2004) suggest that mindfulness allows one to be curious about where the mind wanders to, as well as the different objects within one’s momentary experience; that an accepting stance should be taken towards one’s momentary experience (i.e., ‘a conscious decision to abandon one’s agenda’; p. 233); and, that one remains open to whatever the present offers for experience.

2.6.2.4. **Summary of cognitive models of mindfulness**

In summary, the MAMIG (2006) frames mindfulness as a skill which involves a number of cognitive processes, including metacognition, suppressing attention, and sustaining attention. In terms of the relationship between these cognitive processes, Holas and Jankowski (2013) suggest that mindfulness training has a direct impact upon one’s metacognitive system promoting mindfulness which, in turn, should improve the general level of one’s executive functions and one’s attentional processes (i.e., suppressing and sustaining attention). Bishop et al. (2004) then reiterate the importance of suppressing and sustaining attention for the self-regulation of attention on immediate experience, yet highlight that mindfulness also involves adopting a curious, open, and accepting
orientation towards one’s experiences. Hence, mindfulness is a metacognitive skill which involves suppressing and sustaining attention. (See also Hölzel et al., 2011; Shapiro, Carlson, Astin & Freedman, 2006; Vago & Silbersweig, 2012.)

2.6.3. **Mindfulness and education**

Lau (2009) suggests that ‘we live in a fragmented and alienated world’ (p. 715) which has had a negative impact upon children and young people’s attention, and suggests that ‘[m]indfulness training helps teachers and students in building up concentration and attention’ (p. 725). Following on from this, Jones’ (2011) article on mindfulness in schools suggests that mindfulness has as much of a place within the education system as exams, as mindfulness can be taught in lesson and otherwise prepares pupils for life outside of school. However, Jones (2011) warns of potential barriers to mindfulness in schools, such as: parents/ carers/ teachers feeling that mindfulness labels children as having problems that need fixing; the debate over whether teachers themselves need to be mindfulness practitioners before delivering mindfulness to their pupils; and, the practicalities associated with training teachers to deliver a mindfulness programme to their pupils. Nonetheless, because of its secular nature, mindfulness should not clash with pupils’ religious or cultural beliefs and thus should be implementable within a multicultural classroom, which is of particular relevance to the present study and the context of Harry Close Primary Academy. (See also Lubelska, 2012.)

In terms of the developmental appropriateness of mindfulness for Primary School aged children, Goodman (2005) and Kabat-Zinn (1990b) suggest that children’s openness to experience, readiness to learn, and creativity make them more likely to benefit from mindfulness than adults. Burke (2010) suggests that children and young as 4- and 5-year-old engage well with mindfulness, whilst Hayes and Greco (2008) suggest that the use of metaphor and analogy in mindfulness programmes is suitable for children aged eight or younger due to their affinity to
magical and metaphorical thinking. Nonetheless, Hayes and Greco (2008) highlight that children older than 8-years-old are still likely to benefit from mindfulness programmes that are developmentally appropriate and include concrete instructions and limited time periods for mindfulness practices, as well as physical movement and a focus on discussing experiences. (For a review of mindfulness-based interventions for youth, see Zack, Saekow, Kelly & Radke, 2014.)

2.6.4. **Mindfulness and educational psychology**

Davis (2012), an EP experienced in applying mindfulness principles in day-to-day practice, states that whilst mindfulness-based approaches ‘appear to be versatile and have some evidence base across a number of fields’, these have ‘yet to include educational psychology’ (p. 35). Nonetheless, Davis (2012) is candid in asserting the potential for mindfulness-based approaches to be applied within educational psychology, and states that ‘research does suggest that mindfulness can be usefully introduced to different populations with no previous experience of mindfulness, resulting in a diverse range of potential benefits…[but that] due to the difference between adults and children in cognitive ability, life experience and culture, there is a necessity to give some consideration to the application of [mindfulness-based approaches] to children…as distinct from that of adults’ (p. 36).

Davis (2012) concludes that mindfulness has ‘yet to make an impact on the work of educational psychologists’ (p. 41), and that there is significantly less research that has focussed on the efficacy of mindfulness-based approaches with children and young people when compared to adults, particularly randomised control trials (RCTs) using children and young people. Davis (2012) also warns that measurement of the psychological effects of mindfulness within educational psychology is somewhat more complex than in adult populations. However, one of Davis’ (2012) final remarks is that ‘there is currently sufficient evidence for educational psychologists to incorporate [mindfulness-based approaches] within their work’ (p. 42). (For a review of mindfulness-
based approaches within the US context of school psychology, see Felver, Doerner, Jones, Kaye & Merrell, 2013.)

2.7. **The effects of mindfulness on attention**

The following section reviews and critically evaluates literature pertaining to the effects of mindfulness on attention, using both adult, and child and adolescent, evidence.

2.7.1. **Adult evidence**

Adult evidence pertaining to the effects of mindfulness on attention is mixed and includes both positive evidence and negative evidence, which is discussed below. The following section will also discuss the feasibility of mindfulness to improve adults’ attention.

2.7.1.1. **Positive evidence**

There are myriad studies citing the positive effects of mindfulness programmes on the attentional functioning of adults belonging to non-clinical populations. For example, Moore and Malinowski (2009) compared a group of 25 experienced mindfulness meditators (mean age = 28-years; 13 females) against a group of 25 mindfulness naïve controls (mean age = 27.5-years; 13 females) according to their performances on the Stroop task\(^2\) (Stroop, 1935) and the d2-concentration and endurance test\(^3\) (Brickenkamp & Zilmer, 1998). The mindfulness meditators significantly outperformed the mindfulness naïve control group on both the Stroop task\(^2\) and the d2-concentration and endurance test\(^3\), thus

\(^2\) The Stroop task requires suppressing and sustaining attention as participants are required to state the colour of the font used to write a colour word, whereby some font colours are congruent with the colour words, whereas other are not.

\(^3\) The d2-concentration and endurance tests requires suppressing, sustaining and focusing attention as participants are required to discriminate between target and non-target symbols that are similar in appearance.
leading Moore and Malinowski (2009) to conclude that mindfulness is linked to improvement in attentional functioning, as summarised by the quote, ‘mindfulness meditation encompasses various aspects of attention…the ability to…sustain ones attention and a reduced proneness to distraction’ (p. 177). (See also Chambers, Lo & Allen, 2008; Edel, Hölter, Wassink & Juckel, 2014; Jha, Krompinger & Baime, 2007; Morrison, Goolsarran, Rogers & Jha, 2014; Schmertz, Anderson & Robins, 2009; Tang et al., 2007; Valentine & Sweet, 1999; van den Hurk, Giommi, Gielen, Speckens & Barendregt, 2010.)

2.7.1.2. **Negative evidence**

Not all studies of have found mindfulness programmes to be effective in improving the attentional functioning of adults who belong to non-clinical populations. For example, Anderson, Lau, Segal and Bishop (2007) randomly assigned healthy adults to one of two conditions: an 8-week MBSR intervention ($n = 39$; mean age and gender data missing) or a waitlist control group ($n = 33$; mean age and gender data missing). Pre- and post-intervention measures were taken of sustaining attention (using the Vigil Continuous Performance Test computer programme; Vigil, 1996). Furthermore, Anderson et al. (2007) used the E-Prime computer programme (Psychology Software Tools, Inc., 2013) to design bespoke pre- and post-intervention tasks to assess participants’ shifting attention, Stroop task$^2$ (Stroop, 1935) performance, and detection of primed objects in consistent and inconsistent scenes (Hollingworth & Henderdon, 1998). Participants also completed self-reported measures of mindfulness (the Toronto Mindfulness Scale; Bishop et al., 2003, August) at pre- and post-intervention. Results showed that counter to the above, although the MBSR intervention group demonstrated significant improvements in self-reported mindfulness when compared to waitlist controls, no significant improvements were observed on the measures of attentional control. (See also Josefsson & Broberg, 2011.)
Nonetheless, Moore and Malinowski (2009) highlight a methodological flaw in Anderson et al.’s (2007) study, in that the post-intervention measures were taken up to 4-weeks after the completion of the 8-week MBSR intervention. Furthermore, it can be suggested that the majority of Anderson et al.’s (2007) post-intervention measures were bespoke to their study through their use of the E-prime computer programme (Psychology Software Tools, Inc., 2013), and that they chose to use the Vigil Continuous Performance Test (Vigil, 1996) rather than Conners’ (2000) more widely utilised Continuous Performance Test II. (See also Josefsson, Lindwall & Broberg, 2014.)

2.7.1.3. **The feasibility of mindfulness to improve adults’ attentional functioning**

Given the balance of the above, it is perhaps unsurprising that calls have been made for mindfulness to be used to improve the attentional functioning of adults belonging to clinical populations, including disorders of attention such as ADHD. For example, Cassone (2013) argues that mindfulness should be added to the list of evidence-based treatments for ADHD given the number of recent studies that have successfully adapted mindfulness-based approaches for use with individuals with ADHD. One such study was conducted by Zylowska et al. (2008) who assessed the feasibility of an 8-week mindfulness programme (including 2.5-hours per week on mindfulness exercises related to daily living, as well as daily at-home practice) for adults and adolescents with ADHD using pre- and post-intervention measures of self-reported ADHD symptoms (adults: ADHD Rating Scale IV, DuPaul, 1990; adolescents: SNAP-IV scale, Swanson, 1995) and performance on
tasks measuring attention (the Attention Network Test; ANT\(^4\), Fan, McCandliss, Sommer, Raz & Posner, 2002) and cognitive inhibition (the Stroop task\(^2\), Stroop, 1935; and the Trail Making Test, Reitan, 1979). Twenty-four adults (mean age = 48.5-years; 15 females) and eight adolescents (mean age = 15.6-years; five females) were recruited for the feasibility study, whereby the majority of participants \((n = 18\) adults; \(n = 7\) adolescents) completed the mindfulness programme and reported high levels of satisfaction. Results demonstrated significant post-intervention improvements in self-reported ADHD symptoms, measures of attention (specifically, target detection on the ANT) and cognitive inhibition (including general Stroop task\(^2\) and Trail Making Test performance), thus leading Zylowska et al. (2008) to conclude that mindfulness is a feasible treatment for ADHD in adults and adolescents. Furthermore, Zylowska et al.’s (2008) discussion called for future controlled clinical studies to examine the effects of mindfulness on ADHD.

2.7.2. **Child and adolescent evidence**

There are a growing number of studies citing the positive effects of mindfulness on children’s and adolescents’ attentional functioning, several of which have been harvested from reviews of current research (for example, see Black, Milam & Sussman, 2009; Burke, 2010; Greenberg & Harris, 2012; Harnett & Dawe, 2012; Searight, Robertson, Smith, Perkins & Searight, 2012; Shonin, Van Gordon & Griffiths, 2012; Tang, Yang, Leve & Harold, 2012; Thompson & Gauntlett-Gilbert, 2008), whereby the studies included below have moved away from feasibility studies (such as Zylowska et al., 2008) towards more rigorous designs and methodologies.

\(^4\) The ANT requires participants to quickly and accurately complete a number of computerised neuropsychological tests which assess alerting, orienting and target detection, i.e., sustaining, focusing and shifting attention.
The following section will discuss the positive effects of mindfulness on children and adolescents’ attention; specifically, children and adolescents with reading difficulties, children with ADHD, and mainstream children in community and school settings.

2.7.2.1. Positive evidence using children and adolescents with reading difficulties

Semple, Lee, Rosa and Miller (2010) conducted their study in the USA and recruited 25 pupils in third to seventh grade (i.e., 8- to 13-year-olds; mean age data missing; 15 females; 15 of whom were Latino Americans), whereby all pupils were identified as having significant reading difficulties and were referred following their attendance at a clinic-based remedial reading tutoring program. Semple et al. (2010) utilised a RCT design, whereby 13 pupils were randomly allocated to receive 12-weeks of Mindfulness-Based Cognitive Therapy for Children (MBCT-C) during the winter semester at school, whilst the remaining 12 pupils acted as waitlist controls. The waitlist controls then received the 12-week MBCT-C intervention in the spring semester at school, meaning that there was an intervention cross-lag within the RCT design. The MBCT-C intervention, adapted from Segal, Williams and Teasdale (2002), consisted of 12 weekly 90-minute sessions of mindfulness delivered in small groups, supplemented with brief daily home practice exercises. The MBCT-C intervention used a manualised approach for its delivery and includes mindfulness exercises such as breathing exercises, body scan exercises and mindful movement. However, Semple et al. (2010) did not state whether or not the person delivering the MBCT-C intervention was an experienced mindfulness practitioner themselves, or whether they were trained to deliver MBCT-C by an experienced third party.

There were three measurement occasions: Time-1 involved pre-intervention measures for the intervention group; Time-2 involved post-intervention measures for the intervention group and pre-
intervention measures for the waitlist control group; and, Time-3 involved 3-month follow-up measures for the intervention group and post-intervention measures for the waitlist control group. During all three measurements occasions, pupils’ parents completed the Child Behaviour Checklist: Parent Report Form (Achenbach, 1991b), whereby the Attention Problems scale was an outcome variable of interest. Results demonstrated that there was no significant difference between the two groups at Time-1. Furthermore, results demonstrated that whilst the between-condition ‘time × group’ interaction between Time-1 and Time-2 was not significant (i.e., at Time-2, the intervention group’s scores on the Attention Problems scale were not significantly lower than the waitlist control group’s), the within-group time-lagged crossover interaction was significant (i.e., both the intervention and waitlist control groups had significantly lower scores on the Attention Problems scale at post-intervention when compared to pre-intervention) and produced an effect size of \( r = 0.42 \). The post-intervention reductions on the Attention Problems scale within the intervention group were also maintained at 3-month follow-up.

Upon critically evaluating Semple et al. (2010), methodological strengths included their effective utilisation of a RCT design with an intervention cross-lag, meaning that intervention effects can be inferred; the fact that there were no significant between-condition differences at Time-1; their inclusion of within- and between-condition comparisons; their use of a manualised approach to delivering the MBCT-C intervention, making future replication of results possible; their effective use of a 3-month follow-up with the intervention group; and, their use of parent-reported measures. However, methodological limitations included their missing mean age data, making future replication of results somewhat problematic; the preponderance of Latino American participants, reducing the cross-cultural generalisability of the results to other cultural groups; their small sample size and, by virtue of this,
having insufficient statistical power to infer a medium effect size according to the Attention Problems scale (see Section 3.6.1.4.); the fact that all pupils had significant reading difficulties, making it somewhat difficult to generalise the results to the typically-developing population; their lack of academic proxy measures; the potential for Hawthorne effects, in that parents knew when their children were receiving the MBCT-C intervention, which may have biased their Attention Problems ratings; the fact that the Attention Problems data was not triangulated with more objective measures of attention; the lack of a 3-month follow-up for the waitlist control group; the lack of information regarding whether or not the person delivering the MBCT-C intervention was an experienced mindfulness practitioner themselves and whether they were trained to deliver MBCT-C by an experienced third party; the lack of teacher-reported measures; and, their lack of qualitative data (e.g., pupil/parent/teacher voice).

2.7.2.2. Positive evidence using children with ADHD

van der Oord, Bögels and Peijnenburg (2012) conducted their research in the Netherlands and recruited 18 children between the ages of 8 and 12 (mean age = 9-years 8-months; five females), all of whom had diagnoses of ADHD, and invited them to take part in an 8-week group mindfulness programme. Their parents were also invited to take part in a group mindful parenting programme that was held separately to the child mindfulness programme, whereby all but one child had their mothers participate and one child had their father participate. The child mindfulness programme consisted of eight weekly 1.5-hour sessions in groups of four to six, including mindfulness exercises such as sitting meditation, body scanning, and breathing techniques, as well as home practice assignments. The mindful parenting programme consisted of eight weekly 1.5-hour sessions pertaining to the mindful parenting of adolescents with ADHD, e.g., to be in the present and adopt a non-judgemental stance towards their child; to accept the difficulties associated with
their child; to be mindful of reacting to their child’s ADHD symptoms; etc., as well as home practice assignments. Both mindfulness programmes were based on Mindfulness-Based Cognitive Therapy (Segal, Williams & Teasdale, 2002) and MBSR (Kabat-Zinn, 1990a), but were adapted for use with children with ADHD and their parents. The child mindfulness programme followed an extensive manual developed by van der Oord, Bögels and Peijnenburg (2009), and the mindful parenting programme followed extensive manuals developed by Bögels, Hoogstad, van Dun, de Schutter and Restifo (2008) and Bögels, Lehtonen and Restifo (2010). Of the eight mindfulness sessions that children and parents each received, part of sessions one and six, and all of session eight, were joint sessions where children and their parents practised mindfulness exercises together. In the eighth mindfulness session, children and their parents were encouraged to make a plan about how to continue their practice for a further 8-weeks. The people delivering the mindfulness programmes were experienced mindfulness practitioners and had been trained to deliver the mindfulness programmes by an experienced third party.

One-week before the child mindfulness and mindful parenting programmes began, pre-test measures were taken; post-test measures were taken immediately after children completed the 8-week mindfulness programme; follow-up measures were taken at 8-weeks. On these measurement occasions, children’s attention was measured using the Disruptive Behaviour Disorder Rating Scale (DBDRS; Pelham, Gnagy, Greenslade & Milich, 1992), which was completed by their parents and their teachers, whereby one of the four DBDRS (Pelham et al., 1992) subscales is inattention. The results demonstrated that parents, but not teachers, noted a significant reduction in their children’s inattention between pre- and post-test, and between pre-test and 8-week follow-up.
Upon critically evaluating van der Oord et al. (2012), methodological strengths included their provision of a mindful parent programme, as well as a mindfulness for the children; the fact that the mindfulness programmes were delivered by experienced mindfulness practitioners who were trained to deliver the mindfulness programmes by an experienced third party; their inclusion of teacher- and parent-reported measures; and, their use of a manualised approach to delivering the adolescent and parent mindfulness programmes, making future replication of results possible. However, methodological limitation included their small sample size; the preponderance of participants from the Netherlands, reducing the cross-cultural generalisability of the results to other cultural groups; their lack of a control group and a RCT design, meaning that intervention effects cannot accurately be inferred; the fact that the DBDRS data were not triangulated with more objective measures of attention; their inability to attribute intervention effects to either the children’s or parents’ mindfulness programme, as both interventions took place simultaneously; the inconsistency of their findings, i.e., that parents noted a significant reduction in their children’s inattention, but their children’s teachers didn’t; their lack of academic proxy measures; the potential for Hawthorne effects, in that parents and teachers knew when their children/ pupils were receiving the mindfulness programme, which may have biased their DBDRS ratings; their lack of objective attention measurement; and, their lack of qualitative data (e.g., pupil/ parent/ teacher voice data). (See also Carboni, Roach & Fredrick, 2013; van de Weijer-Bergsma, Formsma, Bruin and Bögels, 2012.)

2.7.2.3. Positive evidence using mainstream children

2.7.2.3.1. Evidence from a community setting

Felver, Tipsord, Morris, Racer and Dishion (2014) conducted their study in the USA and recruited a self-selected sample of
41 parent-child dyads (of the 41 children, mean age = 11-years 1-month; n = 27 females). Felver et al. (2014) utilised a RCT design and randomly allocated the parent-child dyads to one of two conditions: Mindful Family Stress Reduction (MFSR; Felver & Tipsord, 2011; n = 22 parent-child dyads), adapted from MBSR (Kabat-Zinn, 1990b); or, waitlist control (n = 19 parent-child dyads). MFSR consisted of eight weekly 90-minute sessions delivered within a community centre by Felver and Tipsord (who are trained to deliver MBSR). The eight MFSR sessions included a number of mindfulness exercises focusing on breathing, eating, moving, sitting, body scanning, yoga, and imagery.

Children completed a measure of attention (the ANT³; Fan et al., 2002) at pre- and post-intervention. Results demonstrated that, whilst there were no between-condition differences at pre-intervention, children who received MFSR showed significant post-intervention effects in terms of their attention (specifically, significantly lower scores on the conflict monitoring subsystem of the ANT), whereas waitlist control children did not.

Upon critically evaluating Felver et al. (2014), methodological strengths include their effective utilisation of a RCT design, meaning that intervention effects can be inferred; their provision of parent and child mindfulness programme (i.e., MFSR); the fact that MFSR was delivered by experienced mindfulness practitioners who had been trained to deliver MBSR; their use of a manualised approach to delivering the MFSR, making future replication of results possible; their use of the ANT as an objective measure of attention; and, their use of baseline between-condition comparisons. However, methodological limitations include their small sample size; the self-selected nature of the sample; their lack of follow-up
measurements; their lack of academic proxy measures; the fact that the ANT data were not triangulated with teacher- and parent-reported; their lack of the preponderance of participants from America, reducing the cross-cultural generalisability of the results to other cultural groups; their inability to attribute intervention effects to the impact of MFSR on children, parents, or children and parents, as parent-child dyads received MFSR simultaneously; and, their lack of qualitative data (e.g., pupil/parent/teacher voice).

2.7.2.3.2. **Evidence from a school setting**

Napoli, Krech and Holley (2005) conducted their study in the USA and recruited 228 mainstream pupils in first to third grade (i.e., 6- to 9-year-olds; mean age data missing; 108 females). Napoli et al. (2005) utilised a RCT design, whereby 114 pupils were randomly allocated to the Attention Academy Program (AAP), with the remaining 114 pupils acting as controls. The AAP consisted of twelve 45-minute fortnightly sessions which included sitting, movement and body scan mindfulness meditations, and relaxation exercises, which were facilitated by experienced mindfulness instructors and delivered in school. The AAP used a manualised approach for its delivery. Home practice was not reported as part of the intervention. In total, 97 pupils completed the AAP and 97 pupils completed the control group sessions (which consisted of reading and other quiet activities), with the results being based on their data. The people delivering the AAP were experienced mindfulness practitioners and had been trained to deliver the AAP by an experienced third party.

Pupils’ teachers completed pre- and post-intervention measures of ADHD symptoms using the ADD-H Comprehensive Teacher Rating Scale (ACTeRS; Ullmann, Sleator & Sprague, 1997). All pupils were also administered
specific subtests from the Test of Everyday Attention for Children (TEA-Ch; Manly, Nimmo-Smith, Watson, Anderson, Turner & Robertson, 2001) pertaining to focusing and sustaining attention. Results demonstrated that the AAP group had significantly lower teacher-rated ADHD symptoms ($r = 0.49$) and significantly better focusing attention performance ($r = 0.6$) at post-interventions when compared to controls. No significant difference was observed between both groups at post-intervention in terms of sustaining attention.

Upon critically evaluating Napoli et al. (2005), methodological strengths included their effective utilisation of a RCT design, meaning that intervention effects can be inferred; their large sample size; their effective calculation of effect sizes; the fact that the AAP was delivered by experienced mindfulness practitioners who had been trained to deliver the AAP by an experienced third party; their use of the TEA-Ch as an objective measure of focusing attention, and their triangulation of TEA-Ch data with a teacher-reported measure of attention; and, their use of a manualised approach to delivering the AAP, making future replication of results possible. However, methodological limitations included their use of the ACTeRS as teacher rating scale for typically-developing children, given that the ACTeRS is tailored towards the identification of ADHD symptoms; their lack of baseline between-condition comparisons to see if the intervention group and control groups differed significantly before the AAP took place, meaning that the intervention effects cannot be solely attributed to the AAP; their lack of within-condition comparisons; their lack of follow-up measurements; their lack of academic proxy measures; their lack of parent-reported attention measures; their missing mean age data, making future replication of results somewhat problematic; the preponderance of participants from America, reducing the
cross-cultural generalisability of the results to other cultural
groups; the potential for Hawthorne effects, in that teachers
knew who were experimental and control pupils, which may
have biased their ACTeRS ratings; and, their lack of
qualitative data (e.g., pupil/ parent/ teacher voice).

2.8. Mindfulness and neuroscience
The following section provides an overview of the neuroscience of
mindfulness. Specifically, advancements in attentional research have led to
the positive effects of mindfulness on attentional functioning being observed
not only at the behavioural level (as discussed above), but at the neural level,
using Functional Magnetic Resonance Imaging (fMRI\textsuperscript{5}) and Magnetic
Resonance Imaging (MRI\textsuperscript{10}).

2.8.1. fMRI\textsuperscript{5}
Hölzel et al. (2007) used fMRI\textsuperscript{5} to compare the neural activation of 15
experienced mindfulness meditators (mean age = 33.8-years; three
females; mean length of mindfulness practice = 7.9-years; mean length of
daily mindfulness practice = 2-hours) and 15 education-matched novice
mindfulness meditators (mean age = 33.4-years; three females) during a
1-minute mindfulness breathing exercise whilst inside the fMRI\textsuperscript{5}
machine. Results demonstrated that experienced mindfulness meditators
showed significantly greater activation in the rostral anterior cingulate

\textsuperscript{5} fMRI detects neural activation on a moment-by-moment basis by measuring changes
in blood oxygenation throughout the cortex. When the metabolic activity of neurons
increases, so too does their supply of oxyhaemoglobin-rich blood. This increase in
neurons’ metabolism results in a greater concentration of deoxyhaemoglobin and it is
this that forms the basis of the fMRI signal. fMRI has excellent three-dimensional
spatial resolution, thus meaning that neural activation can be detected in very small
cortical regions (Ward, 2006).
cortex\textsuperscript{6} and the dorsomedial prefrontal cortex\textsuperscript{7} when compared to novice mindfulness meditators.

A further study was undertaken by Dickenson, Berkman, Arch and Lieberman (2012) who used fMRI\textsuperscript{5} to ascertain which neural systems support mindfulness meditation in novice mindfulness meditators. Dickenson et al. (2012) recruited 31 novice mindfulness meditators (mean age = 46-years; 15 females) and allocated them to either a mindful breathing condition (where participants were asked to attend to the physical sensations of breathing in a focussed manner) or a control condition (where participants were asked to attend to their thoughts in an unfocussed manner) whilst inside the fMRI\textsuperscript{5} machine. Results demonstrated that in comparison to the control condition, participants in the mindful breathing condition showed significantly greater activation in cortical areas associated with attentional functioning, including the superior parietal lobule\textsuperscript{8}, the temporal-parietal junction\textsuperscript{7}, the pre-

\textsuperscript{6} The anterior cingulate cortex is involved in detecting conflicts that emerge from incompatible streams of information processing (van Veen & Carter, 2002), which, in terms of mindfulness meditation, may involve suppressing one’s attention towards cognitive and emotional experiences that we may otherwise have engaged with or evaluated, whilst sustaining out attention on being the present moment.

\textsuperscript{7} The prefrontal cortex is involved in maintaining our ‘default mode’, i.e., an organised mode of brain function that is present as a baseline and which lessens during goal-directed behaviours, and is thought to indicate self-generated, spontaneous mental activity and intentionally paying attention to our emotional state (Gusnard, Akbudak, Shulman & Raichle, 2001; Lane et al., 1997; Raichle, MacLeod, Snyder, Powers, Gusnard & Shulman, 2001).

\textsuperscript{8} The superior parietal lobule, the temporal-parietal junction, and the pre-supplementary motor area are thought to mediate attention to sensory information and response selection (Corbetta & Shulman, 2002), which, in terms of mindfulness
supplementary motor area\textsuperscript{7}, the insula\textsuperscript{9}, and (similarly to Hölzel et al., 2007) the dorsal ACC\textsuperscript{5}. (See Brefczynski-Lewis, Lutz, Schaefer, Levinson & Davidson, 2007; Dickenson et al., 2012; Manna et al., 2010; Newberg et al., 2010; Tang et al., 2009.)

2.8.2. **MRI\textsuperscript{10}**

Hölzel et al. (2008) compared the grey matter density of 20 experienced mindfulness meditators (mean age = 34.1-years; four females; mean length of mindfulness practice = \textasciitilde{}8.6-years; mean length of daily mindfulness practice = 2-hours) to 20 education-matched controls (mean age = 34-years; four females). In comparison to controls, the density of experienced mindfulness meditators’ grey matter was significantly greater in the right hippocampus\textsuperscript{11}, the right anterior insula\textsuperscript{9}, and the left

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\textsuperscript{7} The supplementary motor area is involved in motor planning and sequences.

\textsuperscript{8} The insula is thought to be involved in our awareness of bodily sensations and has been implicated in attentional control (Corbetta, Patel & Shulman, 2008; Menon & Uddin, 2010), which, in terms of mindfulness meditation, may involve paying attention to the physical sensations of breathing and being.

\textsuperscript{9} MRI can be used to measure the density of grey matter by collecting structural MRI data and classifying it as that which represents grey matter (i.e., the highly convoluted sheet of neuronal cell bodies that constitute the cerebral cortex), white matter (i.e., the neurons and glial cells underlying the cerebral cortex), or cerebrospinal fluid. To calculate grey matter density, the boundary between grey matter and white matter is identified and separated, and the probability of each image voxel being grey matter as opposed to white matter is calculated (Good et al., 2001; Kim et al., 2005; MacDonald, Kabani, Avis & Evans, 2000; Zijdenbos, Forghani & Evans, 2002).

\textsuperscript{10} The hippocampus is thought to be involved in the onset and maintenance of meditative states due to its involvement in cortical arousal and responsiveness.
inferior temporal gyrus\textsuperscript{12}. (For further MRI\textsuperscript{10} studies with similar findings, see Grant et al., 2013; Lazar et al., 2005; Tang et al., 2010; Tang, Lu, Fan, Yang & Posner, 2012.)

2.9. \textbf{Training teachers to deliver a mindfulness programme}

A debate exists as to whether mindfulness teachers need to be established mindfulness practitioners themselves in order to be able to teach mindfulness effectively to others (e.g., children). Kostanski and Hassed (2008), for one, are in favour of teachers of mindfulness being practitioners themselves, as are Epstein (2003), Kabat-Zinn (2003) and Krasner (2004). Both Kostanski and Hassed (2008) and the MAMIG (2006) suggest that it is tradition for teachers to have adopted mindfulness themselves before teaching others, as do Albrecht, Albrecht and Cohen (2012), Kabat-Zinn (1990a), Segal, Teasdale, Williams and Gemar (2002) and Segal, Williams and Teasdale (2002). However, Kostanski and Hassed (2008) note that rigorous scientific evidence surrounding this issue is limited, and ‘\textit{substantial evidence addressing the importance of the practitioner having adopted [mindfulness] practice for themselves is not available}’ (p. 17). It is also interesting to note that Shapiro’s (2006) review of the integration of mindfulness and psychology concludes that a fruitful direction for future research could be to determine the most effective ways of teaching mindfulness, thus suggesting that, at present, there are no hard and fast rules about what the effective teaching of mindfulness would constitute.

On the issue of whether mindfulness will be able to be effectively taught to a group of pupils, rather than on an individual basis, the MAMIG (2006) suggests that it is tradition for mindfulness to be taught in groups, but with

\textsuperscript{12} The inferior temporal gyrus is thought to be involved in religious activity and mystical experiences characterised by deep pleasure and insight (Saver & Rabin, 1997).
individual support, as this is cost-effective; allows pupils to learn from one another via observation, modelling and imitation (see Bandura, 1977); and, allows greater pupil motivation due to peer support. The MAMIG (2006) then suggests that the only challenge posed by teaching mindfulness to a group of pupils is the dual burden of the teacher learning how to teach mindfulness at the same time as utilising their groupwork skills. However, as any Primary School teacher will be highly accustomed to utilising their groupwork skills in delivering the many aspects of the National Curriculum (DfE, 2013), the only challenge posed by teaching mindfulness to a group of pupils is the teacher learning how to teach mindfulness.

2.10. **Knowledge gap and ‘closest match’ study**

Greenberg and Harris (2012) state that ‘very few trials of meditation-based interventions with children have been conducted with universal [i.e., mainstream] populations’, and those that have been conducted with mainstream populations ‘suffer from problems in design, sample size, and measurement, [thus] reducing confidence in the findings’ (p. 163). Black et al. (2009) also focus on the need to ‘measure the impact of meditation on aspects of positive functioning...in universal [i.e., mainstream] populations.’ (p. 538). In terms of how to move research forwards when focusing upon the use of mindfulness with children, Greenberg and Harris (2012) suggest that studies need to be designed to provide high-quality evidence (i.e., RCTs; unbiased measures; long-term follow-ups of at least 6-months; appropriate control groups; educational outcomes), and clearer description of the intervention (i.e., content; timing and duration; the amount and nature of teacher training and qualifications).

Hence, on the basis of the above literature review, and Greenberg and Harris (2012) and Black et al.’s (2009) comments, the researcher identified a knowledge gap which pertains to the use of mindfulness with mainstream Primary School aged pupils and the evaluation of its impact upon their attention (including teacher-reported and objective measures of attention) and academic progress (including ecologically valid academic proxy measures.
such as National Curriculum levels of progress; DfE, 2013, and quality of work produced in class).

The ‘closest match’ study from the literature review above is Napoli et al. (2005) due to their excellent sample size of 228 pupils in first to third grade, all of whom were mainstream (as advocated by Greenberg & Harris, 2012, and Black et al., 2009); their use of a RCT design to randomly allocate pupils to either the AAP intervention or control condition (as advocated by Greenberg & Harris, 2012); their provision of the AAP which adopted a manualised approach and which was delivered by experienced mindfulness practitioners who had been trained to deliver the AAP intervention by an experienced third party (as advocated by Greenberg & Harris, 2012); and, their between-condition comparison of pupils’ attention at pre- and post-intervention using teacher-reported measures of attention and the TEA-Ch as an objective measure of attention (as advocated by Greenberg & Harris, 2012).

Nonetheless, there are parallels between the present study and Semple et al. (2010) due to their use of RCT with an intervention cross-lag, which allowed for a more ethical waitlist control group compared to Napoli et al.’s (2005) less ethical comparative control group. Furthermore, unlike Napoli et al. (2005), Semple et al. (2010) included a 3-month follow-up within the intervention group (as advocated by Greenberg & Harris, 2012). However, neither Napoli et al. (2005), nor Semple et al. (2010), evaluated the impact of mindfulness of mainstream Primary School aged pupils’ academic proxy measures (what Black et al., 2009, term aspects of positive functioning). Furthermore, both Napoli et al.’s (2005) and Semple et al.’s (2010) studies took place within the USA.

Hence, the researcher intended to contribute to this knowledge gap by evaluating the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and their academic proxy measures, within the UK context.
2.11. **Aim and RQs**

The aim of the present study was to evaluate the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and their academic proxy measures, within the UK context, and to ascertain pupil and teacher views about the usefulness of Paws .b. The three RQs were:

*RQ1. To what extent does the Paws .b mindfulness programme lead to an improvement in mainstream Primary School aged pupils’ suppressing and sustaining attention skills?*

*RQ2. To what extent does the Paws .b mindfulness programme lead to an improvement in mainstream Primary School aged pupils’ academic proxy measures?*

*RQ3. What aspects of the Paws .b mindfulness programme are perceived to be beneficial/ non-beneficial by mainstream Primary School aged pupils and their teachers?*

2.12. **Utility of research and expected contribution**

The anticipated utility of the research, in term of addressing the above aim and answering the above RQs, was that if the Paws .b mindfulness programme significantly improves mainstream Primary School aged pupils’ attention and academic proxy measures, New Directions Educational Trust EPs and Primary School staff would be able to ensure pupils’ maximal attentional development and academic progress by enriching their classroom environments accordingly (see Bledsoe, Semrud-Clikeman & Pliszka, 2010; Breslau et al., 2010; Rabiner, Malone & the Conduct Problems Prevention Research Group, 2003; Ruff & Rothbart, 1996; Schweizer, Moosbrugger & Goldhammer, 2005; Stage, Abbott, Jenkins & Berninger, 2003; Steele, Karmiloff-Smith, Cornish & Scerif, 2012).
2.13. **Summary of literature review**

In summary, Luria’s (1973) neuropsychological model of attention underpins the neuropsychological approach adopted within the present study, whereby the attention context illuminates the relevance of attentional research to EPs’ practice. Given the scope of the present study, the researcher chose to evaluate the impact of the Paws .b mindfulness programme as one form of attention state training on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and their academic proxy measures. Relative to this, there is a wealth of literature which highlights the largely positive impact of mindfulness on both adults’, and children and adolescents’, attention using both behavioural and neural observations. However, there is no literature on the impact of mindfulness on Primary School aged pupils’ academic proxy measures. Hence, a knowledge gap was able to be identified within the literature and there are two ‘closest match’ studies relative to the present study.
CHAPTER 3 – Methodology

The methodology chapter begins with the rationale for the present study and a discussion regarding the researcher’s adoption of a critical realist ontological stance. The design of the study is highlighted, which includes a discussion of literature pertaining to implementation and an overview of the Paws .b mindfulness programme. The process of participant recruitment is then detailed, leading to a description of the present sample. Following this, the quantitative and qualitative data gathering and data analysis methods are outlined and evaluated. Lastly, the methodological design is critiqued, before referencing the appendices relevant to the time-line and time budget, the operational risk analysis, and ethics.

3.1. Rationale

As stated in Section 2.11., the aim of the present study was to evaluate the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and academic proxy measures, within the UK context, and to ascertain pupil and teacher views about the usefulness of Paws .b. The three RQs were:

RQ1. To what extent does the Paws .b mindfulness programme lead to an improvement in mainstream Primary School aged pupils’ suppressing and sustaining attention skills?

RQ2. To what extent does the Paws .b mindfulness programme lead to an improvement in mainstream Primary School aged pupils’ academic proxy measures?

RQ3. What aspects of the Paws .b mindfulness programme are perceived to be beneficial/ non-beneficial by mainstream Primary School aged pupils and their teachers?

3.2. Ontological stance

Critical realism was deemed to be the ontological stance that was most suited to the present study, whereby the researcher felt that it provided a rationale
for rigorous scientific research, i.e., to “acknowledge [the] dependence of actions on shared meanings while showing in what respects they are false, if they are” (Sayer, 2000, p. 18-19). The researcher will now elaborate on their decision to employ a critical realist ontological stance by reflecting upon its ontological components, its use within educational research, and its relevance to the present study.

3.2.1. **The ontological components of critical realism**

Dickens (2003) details the five ontological components of critical realism:

1. The goal of critical realism is to identify the nature of causal mechanisms underlying what we observe and experience. However, we are unlikely to observe causal mechanisms operating in a neat fashion;

2. Causal mechanisms are organised in a stratified manner. Operating at the most general levels are physical and chemical causal mechanisms; operating at higher levels are physiological causal mechanisms; and, operating at higher levels still are psychological and social causal mechanisms.

3. Causal mechanisms do not simply operate within their specified level. As we move through the levels, each causal mechanism is formed by the causal mechanisms of the underlying levels;

4. Critical realism makes no claims as to certain levels being more basic than others, and thus militates against attempts to reduce causal mechanisms to their most basic level of understanding;

5. Critical realism is critical because the natures of causal mechanisms operating within the various levels are subject to constant critique and scientific development, meaning that critical
realism permits adequate explanations of the truth, rather than hard quantitative proof of the truth.

Upon reflection, the ontological components of critical realism corroborated well with the aim of the present study, as the researcher essentially sought to provide an adequate explanation of the physiological and psychological causal mechanisms underlying possible changes in pupils’ suppressing and sustaining attention skills, and academic proxy measures, as a result of Paws .b. Furthermore, the researcher sought to provide an adequate explanation of the psychological and social causal mechanisms underlying pupil and teacher perceptions of the beneficial/ non-beneficial aspects of Paws .b.

3.2.2. Critical realism and educational research

Scott (2005) discussed the relationship between critical realism and the use of empirical research methods in education. Scott (2005) begins by making two assertions. Firstly, the use of empirical research methods in education needs to be underpinned by a meta-theory, such as critical realism, as in the present study. Secondly, believing that an independent reality exists (e.g., that Paws .b improves Primary School aged pupils attention and academic proxy measures) does not mean that the researcher is committed to the view that it is possible to have absolute knowledge of the ways in which the independent reality works, as any attempts to determine the exact nature of social worlds are always fallible. Hence, critical realism is realist because it permits the researcher to assert that there are objects in the world, including social objects, regardless of whether the researcher can know them absolutely or not. Then, critical realism is critical because any attempts made by the researcher to explain the world are bound to be fallible and are unable to be justified in an absolute sense, thus leaving the researcher’s explanations open to critique and alternative explanations, which is of particular importance for the researcher’s objective and scientific stance throughout their evaluation of Paws .b.
3.2.3. **Critical realism and the present study**

Pratschke (2003) highlights that critical realism allows successful human interventions to be used as the premise for derivation, which thus allows the researcher to assume that, although fallible, there is no reason that their judgements of the Paws .b mindfulness programme (i.e., a potentially successful human intervention) are not accurate. Pratschke (2003) also highlights that critical realism allows hypotheses to be made about unobservable mechanisms by noting their observable effects, which is of particular relevance to the present study in terms of the researcher hypothesising that they will be able to infer the neuropsychological impact of the Paws .b mindfulness programme by observing its impact upon mainstream Primary School aged pupils’ attention and academic proxy measures.

3.3. **Design of the study**

A quasi-mixed methods RCT design with a quasi-experimental intervention cross-lag was used to evaluate the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils’ attention and academic proxy measures, in the UK context, and to ascertain pupil and teacher views about the usefulness of Paws .b. (for a description of an intervention cross-lag, see Semple et al., 2010).

Two classes of Year-4 pupils (i.e., pupils who are between 8- and 9-years old) and their teachers were randomly assigned to one of two conditions: an experimental group; or a waitlist control group (WCG). There were four data collection time-points: Baseline; Time-1; Time-2; and, Time-3.

As suggested by Onwuegbuzie and Leech (2005), quantitative methods were used for confirmatory means to answer RQ1 and RQ2, and qualitative methods were used for exploratory means to answer RQ3. As such, the researcher used a quasi-mixed methods design, in that both quantitative data and qualitative data were gathered, but were not integrated in answering the RQs (Teddlie & Tashakkori, 2009). According to Reams and Twale (2008), mixed methods designs are ‘necessary to uncover information and
perspective, increase corroboration of the data, and render less biased and more accurate conclusions’ (p. 133).

The 6-week Paws .b mindfulness programme (with a 1-hour lesson per week) was delivered by the same mindfulness teacher, who was one of the two teachers from Harry Close Primary Academy who was trained to deliver Paws .b mindfulness programme by the Mindfulness in Schools Project. Furthermore, the mindfulness teacher no longer had a teaching commitment within Harry Close Primary Academy due to being Assistant Vice Principal. The experimental group received Paws .b between Baseline and Time-1, whereas the WCG received Paws .b between Time-1 and Time-2. Hence, the intervention cross-lag took place at Time-1 (i.e., after the experimental group had finished receiving Paws .b, yet before the WCG began receiving Paws .b), whereby the mindfulness teacher simply ‘crossed over’ from the experimental group to the WCG.

The relationship between the four time-points and the intervention stages per condition are represented in Table 3 (see below).

Table 3. Relationship between the four time-points and the intervention stages per condition

<table>
<thead>
<tr>
<th>Condition</th>
<th>Intervention stage</th>
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<tbody>
<tr>
<td></td>
<td>Baseline</td>
</tr>
<tr>
<td>Experimental</td>
<td></td>
</tr>
<tr>
<td>group</td>
<td>Pre-</td>
</tr>
<tr>
<td></td>
<td>intervention</td>
</tr>
<tr>
<td>WCG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre pre-</td>
</tr>
<tr>
<td></td>
<td>intervention</td>
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</table>

In terms of the follow-ups, Time-2 was 8-weeks after the experimental group had finished receiving the Paws .b mindfulness programme (due to a 6-week half term and a 2-week holiday). Hence, Time-2 was an 8-week follow-up for the experimental group. Time-3 was 14-weeks after the experimental group had finished receiving the Paws .b mindfulness programme (due to a 5-week
half term and a 1-week holiday, in addition to the previous 8-week follow-up) and was 6-weeks after the WCG had finished receiving the Paws .b mindfulness programme (due to a 5-week half term and a 1-week holiday). Hence, Time-3 was a 14-week follow-up for the experimental group and a 6-week follow-up for the WCG.

3.3.1. **Supervision**

Weekly supervision was provided by the researcher to the mindfulness teacher whilst they delivered the Paws .b mindfulness programme. This consisted of weekly meetings and informal conversations (e.g., via phone and e-mail). The rationale behind this was for the researcher to ensure that the design of the present study was implemented within the real-world context of Harry Close Primary Academy, especially with regards to the relative complexity of the RCT and intervention cross-lag elements of the design. Fortunately, throughout the two periods of Paws .b delivery (i.e., between Baseline and Time-2), no supervision concerns were raised by the mindfulness teacher, whereby the supervision sessions largely consisted of a reflective space where the mindfulness teacher discussed the most recent Paws .b lesson.

3.3.2. **Implementation**

Implementation refers to ‘*put[ing] an innovation into use*’ (Rogers, 2003, p. 20).

3.3.2.1. **Two aspects of implementation: Fidelity and adaptation**

Implementation fidelity (or ‘fidelity’) refers to ‘*the degree to which teachers and other program providers implement programs as intended by the program developers*’ (Dusenbury, Brannigan, Falco & Hansen, 2003, p. 240), i.e., the internal validity of a programme. Failure to implement programmes with fidelity may mean that intended change is not triggered, whereby the positive correlation between fidelity and achievement of outcomes has been consistently demonstrated (for example, see Durlak & DuPre, 2008).
In contrast, adaptation refers to ‘changes made in the original program during implementation’ (Durlak & DuPre, 2008, p. 329), whereby adaptations are seen as inevitable for school-based programmes, such as Paws .b. Adaptations can be intentional or accidental; proactive or reactive; structural or superficial; beneficial or non-beneficial. Nonetheless, Durlak (1998) highlights that fidelity and adaptation can co-occur. For example, Durlak and DuPre (2008) found that positive outcomes have been achieved with as low as 60% fidelity, whereby few studies have achieved higher than 80% fidelity. Hence, providing that low levels of adaptation co-occur with high levels of fidelity, outcomes will still be positive and may even be bolstered by beneficial adaptations.

Thus, Durlak and DuPre (2008) highlight that it is imperative for programme developers to specify the theoretically important components of the programme for the purpose of implementers being able to achieve the necessary high levels of fidelity (i.e., ≥ 60%), thus leaving the less theoretically important components open to low levels of adaptation. Furthermore, as adaptation can be beneficial for outcomes, it is equally important for implementers to identify the adaptations that they make to the programme and their reasons for doing so. It is also important for researchers to examine the effects of adaptations on the achievement of outcomes.

3.3.2.2. Six further aspects of implementation

In addition to fidelity and adaptation, Durlak and DuPre (2008) recommend that researcher assess a further six aspects of implementation:

- Dosage (i.e., how much of the programme has been delivered);
• Quality of delivery (i.e., how well different programme components have been delivered);

• Participant responsiveness (i.e., the degree to which the programme stimulates the interest/ holds the attention of participants);

• Programme uniqueness (i.e., the extent to which the programme’s theory and practices can be distinguished from other programmes);

• Monitoring of control/ comparison conditions (i.e., describing the nature and amount of services received by control/ comparison groups);

• Programme reach (i.e., participation rates and representativeness of participants).

3.3.2.3. **From efficacy to effectiveness**

Greenberg, Domitrovich, Graczyk and Zins (2004) use the term ‘efficacy trial’ to describe a formal evaluation of a new programme in which the model is tested using an RCT design, i.e., in experimental conditions. Efficacy trials are the gold standard of evaluation.

Once the efficacy of a new programme has been empirically established, the focus then moves to an ‘effectiveness trial’ in which empirically supported programmes are trialled under the control of the community or schools in real-world settings, i.e., in non-experimental conditions. Effectiveness trials are crucial for understanding how empirically established programmes are likely to be implemented within the constraints of real-world settings, and
to determine which factors affect the programme’s implementation in real-world settings.

Hence, the present study can be considered to be an efficacy trial of the Paws .b mindfulness programme (i.e., Paws .b was formally evaluated using a RCT design in quasi-experimental conditions).

3.3.3. **Implementation checks**

Relative to the abovementioned importance of assessing Durlak and DuPre’s (2008) eight aspects of implementation, Barnett, Hawkins and Lentz Jr. (2011) state that implementation checks ‘should be the default decision when a chosen intervention requires schools to make a serious investment in staff time..., materials, or training’ (p. 177). As for the process of carrying out implementation checks, Barnett et al. (2011) posit the use of direct observation by a professional not directly involved in delivering the programme (e.g., the researcher) and indirect ratings, whereby the method used to achieve this is dependent on the nature of the programme (p. 180).

Hence, the researcher designed an implementation check observation proforma (see Appendix 7) and observed each of the six Paws .b lessons across the two periods of delivery. Specifically, the researcher observed Paws .b lessons one, three and five in the experimental group, and observed Paws .b lessons two, four and six in the WCG.

The implementation check observation proforma was designed to assess:

- Fidelity and adaptation by asking the researcher to state whether the Paws .b lesson was delivered in accordance with the Paws .b resources and lesson plan; and, to detail which mindfulness practices were included in the Paws .b lesson;

- Dosage by recording the Paws .b lesson number;
• Quality of delivery by asking the researcher to state whether there were any process and/or practice issues; and, by asking the researcher to record any interesting quotes;

• Participant responsiveness by asking the researcher to state whether pupils were engaged in the Paws .b lesson/ responded well to the content of the Paws .b lesson; responded well to the mindfulness practices within the Paws .b lesson; and, by asking the researcher to record any interesting quotes;

• Programme reach by recording the number of pupils present during each Paws .b lesson.

In addition to the six implementation checks carried out by the researcher using the implementation check observation proforma:

• Dosage was further assessed during weekly supervision with the mindfulness teacher by asking them to confirm that they had delivered the Paws .b lessons that the researcher was unable to observe (i.e., lessons two, four and six in the experimental group, and lessons one, three and five in the WCG);

• Programme reach was further assessed by accessing the school registers and recording the number of pupils present for each of the Paws .b lessons that the researcher was unable to observe.

Programme uniqueness was not directly assessed as Paws .b was the first published and UK-based manualised mindfulness programme designed for Primary School aged pupils. Furthermore, monitoring of control/comparison conditions was not directly assessed due to the utilisation of a quasi-mixed methods RCT design with a quasi-experimental intervention cross-lag.
3.3.4. **Overview of the Paws .b mindfulness programme**

An overview of the Paws .b mindfulness programme is represented in Table 4 (see below).

**Table 4. Overview of the Paws .b mindfulness programme**

<table>
<thead>
<tr>
<th>Lesson number</th>
<th>Description of content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>• An introduction to the brain;</td>
</tr>
<tr>
<td></td>
<td>• A discussion of our ability to make choices;</td>
</tr>
<tr>
<td></td>
<td>• A breath counting mindfulness exercise.</td>
</tr>
<tr>
<td>2</td>
<td>• An introduction to the ‘searchlight’ of attention;</td>
</tr>
<tr>
<td></td>
<td>• An introduction to the philosophy of mindfulness;</td>
</tr>
<tr>
<td></td>
<td>• Two mindful breathing exercises.</td>
</tr>
<tr>
<td>3</td>
<td>• A grounding mindfulness exercise;</td>
</tr>
<tr>
<td></td>
<td>• A discussion of ‘wobbly feelings’.</td>
</tr>
<tr>
<td>4</td>
<td>• The ‘count and add two’ mindful breathing exercise;</td>
</tr>
<tr>
<td></td>
<td>• A discussion of how to avoid reacting badly to situations.</td>
</tr>
<tr>
<td>5</td>
<td>• A discussion of worries;</td>
</tr>
<tr>
<td></td>
<td>• A discussion of how worries can be supported by the previously learnt mindfulness exercises.</td>
</tr>
<tr>
<td>6</td>
<td>• A recap of learning;</td>
</tr>
<tr>
<td></td>
<td>• Practise all learnt mindfulness exercises.</td>
</tr>
</tbody>
</table>

In terms of a rationale for the Paws .b mindfulness programme’s content and length, discussions with the Mindfulness in School Project allowed the researcher to establish that Paws .b was a Primary School-friendly reincarnation of the Mindfulness in Schools Project’s 9-week mindfulness programme for teenagers called ‘.b for teens’ (Mindfulness in Schools Project, 2013b). Specifically, following the success of .b for teens (see Huppert & Johnson, 2010; Kuyken et al., 2013), the Mindfulness in Schools Project differentiated the .b for teens materials so that Primary School aged children could access the curriculum content and mindfulness practices. Hence, as .b for teens contains nine 1-hour
lessons to be delivered weekly, the Paws .b mindfulness programme became somewhat shorter and contains six 1-hour lessons to be delivered weekly, but with similar content to .b for teens.

3.4. **Participant recruitment and sample**

3.4.1. **Target population**

As discussed in Section 2.4.2., the researcher used convenience sampling and decided to undertake the present study within Harry Close Primary Academy because two of its teachers were to be trained by the Mindfulness in Schools Project to deliver Paws .b. Following on from this, a number of factors influenced the researcher’s decision to target Year-4 pupils (i.e., those aged 8- or 9-years) within Harry Close Primary Academy.

Firstly, the mean age of participants in the child and adolescent evidence section of the literature review was 10-years 2-months, i.e., Year-5/ -6 in UK Primary Schools. However, both Year-5 and Year-6 in UK Primary Schools are characterised by exam preparation. Therefore, an ethical decision was taken to target pupils in Year-4, as this was the closest year group to Year-6 that would not be experiencing exam preparation.

Secondly, as discussed in Section 2.6.3., mindfulness is deemed developmentally appropriate for children aged 4-years and above, providing that necessary adjustments are made, whereby the Mindfulness in Schools Project also anecdotally reported that the Paws .b mindfulness programme worked well in Year-4 during their piloting of Paws .b in North Wales.

3.4.2. **Participant recruitment**

Participant recruitment began in September 2013. The researcher built relationships with the executive headteacher and mindfulness teacher at Harry Close Primary Academy and notified them of the researcher’s desire to carry out their thesis research within their school. Following
this, the mindfulness teacher read their participant information sheet (see Appendix 8) and completed their consent form (see Appendix 9). The executive headteacher, mindfulness teacher and researcher then held a face-to-face meeting with the two Year-4 class teachers at Harry Close Primary Academy, after which the teachers read their participant information sheets (see Appendix 10) and completed their consent forms (see Appendix 11).

Finally, with the support of the mindfulness teacher, the researcher invited all parents/ carers from the two Year-4 classes to attend an information morning with both Urdu and Bengali translators present13. A presentation was given to highlight the main points within the parent/ carer participant information sheet (see Appendix 12). The parents/ carers who attended were provided with the parent/ carer participant information sheet (see Appendix 13), as well as an English parent/ carer consent form because of the presence of the translators (see Appendix 14). The parents/ carers who did not attend the presentation received a parent/ carer participant information sheet (see Appendix 13) and an Urdu or Bengali translated consent form (see Appendices 15 and 16) in the post. Due to costing restrictions, the parent/ carer participant sheet wasn’t translated into Urdu or Bengali.

As Harry Close Primary Academy had already decided that it would introduce the Paws .b mindfulness programme into its Year-4 curriculum, the researcher was not required to ask parents/ carers to consent to their child taking part in Paws .b. but only to information being collected about their child. Therefore, if a parent or carer did not consent to information collection, the child still received the Paws .b mindfulness programme.

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13 The majority of pupils at Harry Close Primary Academy have English as an additional language and their parents predominantly speak either Urdu or Bengali as their first language.
On 18/12/2014, after allowing for the longest period of time in which to receive parent/ carer consent forms, the researcher visited the two Year-4 classes, explained the research project to the pupils, and provided assent forms for the pupils whose parents/ carers had provided consent for information to be collected about them (see Appendix 17).

3.4.3. **Sampling design**

According to Teddlie and Taskakkori (2009), and Cohen, Manion and Morrison (2008), the researcher used a parallel mixed methods convenience sampling design: parallel in the sense that the participant samples for each condition ran side-by-side simultaneously, but were separate from each other (i.e., the data collected from one samples did not affect the data collected from the other sample); and, convenience in the sense that the sample was based on those whom the researcher has easy access to at Harry Close Primary Academy.

3.4.4. **Quantitative sample**

By Baseline, the researcher had recruited a total of 30 Year-4 pupils: 16 from one class; and, 14 from the other, as well as their class teachers and the mindfulness teacher. All 30 pupils had English as an additional language. Using the coin toss method, the researcher randomly allocated the 16 pupils and their class teacher to the experimental group and the 14 pupils and their class teacher to the WCG. Of the experimental pupils, seven were female and nine were male, with a mean age at Baseline of 8-years 9-months. The experimental teacher was a female newly qualified teacher. Of the 14 waitlist control pupils, eight were females and six were males, with a mean age at Baseline of 8-years and 10-months.

Throughout the present study, the WCG had two class teachers: the first waitlist control teacher was a female teacher with 4-years’ teaching experience who left at the end of the January to February 2014 half term (i.e., just before Time-1) to go on maternity leave. The first waitlist control teacher was replaced by the second waitlist control teacher at the beginning of the February to April 2014 half term (i.e., at Time-1) who
was a newly qualified teacher and who was recruited using the same process as for the first waitlist control teacher. (See Section 3.5.1. for a discussion of the quantitative data gathering methods; see Figure 2 for a diagrammatical representation of the sample.)

3.4.5. **Qualitative sample**

At Time-1, using the names in a hat method, the researcher selected a convenience sample of four females and four males from the experimental group to take part in two separate FGs (see Appendix 4): one for girls; and, one for boys. At Time-2, the researcher repeated this process and selected a convenience sample of four females and four males from the WCG. Before the FGs took place, the researcher explained the purpose of the FG and sought pupil assent (see Appendix 17). The total of four pupils in each FG was in line with Barbour (2007), who recommends that FGs should consist of three to eight participants. Then, at Time-1, the experimental teacher took part in a semi-structured interview (see Appendix 5), followed by the waitlist control teachers and the mindfulness teacher at Time-2. (See Section 3.5.2. for a discussion of the qualitative data gathering methods; see Figure 2 for a diagrammatical representation of the sample.)
Figure 2. Diagrammatical representation of the sample
3.4.6. **Pupil identification**

Pupils were given an anonymous identification code which consisted of the first three letters of their surname, followed by the first two digits of their date of birth, e.g., Henry Smith born on 01/02/2003 would be identified as ‘Smi01’.

3.4.7. **Participant attrition**

Fortunately, apart from the first waitlist control teacher going on maternity leave at the end of Time-1, there was no participant attrition. Registers were taken to monitor pupils’ attendance during the Paws .b lessons and only two pupils from the experimental group and four pupils from the WCG missed one lesson of Paws .b. This low level of absenteeism was not deemed sufficient to exclude these pupils’ data from analysis, particularly as each Paws .b lesson began with a recap of learning from the previous lesson.

3.5. **Data gathering methods**

As discussed in Section 3.3., the researcher opted for a quasi-mixed methods design (see Teddlie & Tashakkori, 2009, p. 142), in that quantitative methods were used for confirmatory means to answer RQ1 and RQ2, and qualitative methods were used for exploratory means to answer RQ3, relative to the suggestion of Onwuebuzie and Leech (2005, p. 382). Hence, the data gathering methods section will be discussed in terms of the quantitative data gathering methods used to answer RQ1 and RQ2, and the qualitative data gathering methods used to answer RQ3.

3.5.1. **Quantitative data gathering methods**

3.5.1.1. **Data gathering methods for RQ1**

There were two data gathering methods for RQ1: the Attention Checklist (Das, 2002; see Appendix 1), which was a questionnaire that assessed the observable attention behaviours that pupils display in the classroom; and, the naming and inhibition sections of the
NEPSY-II (Korkman, Kirk & Kemp, 2007) Inhibition subtest, which were two assessments within the NEPSY-II which is otherwise a norm-referenced and standardised neuropsychological assessment battery. The Attention Checklist was teacher-reported, whilst the naming and inhibition sections of the NEPSY-II Inhibition subtests were researcher-administered. Both data gathering methods will be discussed in terms of links with literature, comparison to similar data gathering methods, participant requirement, scoring and variables created, and piloting. (See Section 3.5.3. for a summary for the data gathering methods for RQ1.)

3.5.1.1.1. **Attention Checklist**

3.5.1.1.1.1. **Links with literature**

The researcher’s Assignment 1\(^1\) pilot study (Thomas, 2013) found that suppressing and sustaining attention were most commonly used by mainstream Primary School aged pupils, and that the Primary School curriculum makes most demands on suppressing and sustaining attention. Therefore, as the researcher decided to evaluate the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils’ attention (specifically, their suppressing and sustaining attention skills), the researcher felt that it would be sensible to select an attention measure that was sensitive to both suppressing and sustaining attention.

To this effect, the teacher-reported Attention Checklist (Das, 2002; see Appendix 1) was chosen due to it being high in face validity relative to assessing pupils’ suppressing and sustaining attention skills, in that questions two, three, four, eight and 12 assess suppressing attention; questions one, five, six, seven, nine
and 11 assess sustaining attention; and, question 10 assesses both suppressing and sustaining attention. Furthermore, the construct validity and reliability of the Attention Checklist was established by Das and Melnyk (1989). The 12 question items loaded onto a single factor when analysed and explained 70.7% of the variance in their sample of adolescents’ scores. Cronbach’s alpha of 0.94 was also observed, which is above the 0.7-0.8 acceptable value range (Field, 2005, p. 666-677).

3.5.1.1.1.2. **Comparison to similar data gathering methods**

Having assessed a number of teacher-reported attention measures, including the Child Behaviour Checklist: Teacher Report Form (Achenbach, 1991a) and the Conners 3: Teacher (Conners, 2008), the Attention Checklist was chosen due to it being more sensitive to suppressing and sustaining attention. Hence, the suitability of the Attention Checklist was established.

3.5.1.1.1.3. **Participant requirements**

The experimental teacher and waitlist control teachers were required to complete the Attention Checklist for each of their pupils at the four time-points (see Section 3.5.3.). As can be seen in Appendix 1, the Attention Checklist consists of 12 questions that pertain to the observable attention behaviours that pupils display in the classroom, whereby the experimental teacher and waitlist control teachers were required to rate each observable attention behaviour on a 4-point likert scale which included the descriptors: ‘Not at all’; ‘Just a little’; ‘Pretty much’; and, ‘Very much’. (See Table 5.1)
3.5.1.1.4. **Scoring and variables created**

The 12 questions within the Attention Checklist were both positively and negatively coded. For example, the third question, ‘Does the child accurately heed directions?’, was positively coded, whereby the descriptor, ‘Very much’, would have received a score of 4, whereas the first question, ‘Does the child have a short attention span?’, was negatively coded, whereby the descriptor, ‘Very much’, would have received a score of 1. Hence, higher scores on the Attention Checklist indicate better attention behaviours, whereby the lowest possible score is 12 and the highest possible score is 48.

The Attention Checklist data collected at each of the four time-points were classified as interval data and were scored according to the values specified within the Attention Checklist.

This therefore generated one variable which will henceforth be referred to as ‘Attention Checklist’.

3.5.1.1.5. **Piloting**

The researcher piloted the Attention Checklist with a Year-4 teacher from Mill Hill Primary Academy (another Primary School within the New Directions Educational Trust) prior to the main study in order to establish the convenience of the measure relative to the time that it would take the experimental teacher and the waitlist control teachers to complete. The researcher asked the pilot teacher to complete the Attention Checklist for five pupils, without naming them (for confidentiality purposes). The researcher anticipated that it would take less than 15-minutes for the experimental teacher and waitlist control teachers to complete the Attention
Checklist for all pupils at each time-point and less than an hour in total across the four time-points.

3.5.1.1.2. **The naming and inhibition sections of the NEPSY-II Inhibition subtest**

3.5.1.1.2.1. **Links with literature**

See Section 3.5.1.1.1.1. for a discussion of the rationale behind selecting an attention measure sensitive to both suppressing and sustaining attention.

To this effect, the naming and inhibition sections of the NEPSY-II (Korkman, Kirk & Kemp, 2007) Inhibition subtest were chosen due to them being high in face validity relative to assessing pupils’ suppressing and sustaining attention skills. As described below (see Section 3.5.1.1.2.3.), the circles and squares/ up and down arrows naming tasks assessed pupils’ sustaining attention skills as they were required to maintain focus and alertness over time whilst naming shapes/ arrows. Furthermore, the circles and squares/ up and down arrows inhibition tasks assessed pupils’ suppressing attention skills as they were required to inhibit prepotent responses/ suppress impulsive responses whilst naming opposite shapes/ arrows.

3.5.1.1.2.2. **Comparison to similar data gathering methods**

The researcher considered both the NEPSY-II and the TEA-Ch (Manly et al., 2001), which is also a norm-referenced and standardised neuropsychological assessment battery that the researcher could self-administer. However, the naming and inhibition sections of the NEPSY-II Inhibition subtest were chosen due to
them being more sensitive to suppressing and sustaining attention than the TEA-Ch. Hence, the suitability of the naming and inhibition sections of the NEPSY-II Inhibition subtest was established.

3.5.1.2.3. **Participant requirements**

The researcher administered the naming and inhibition sections of the NEPSY-II Inhibition subtest to each of the experimental and waitlist control pupils at the four time-points. The naming section of the NEPSY-II Inhibition subtest consisted of two naming tasks; the inhibition section of the NEPSY-II Inhibition subtest consisted of two inhibition tasks. The two naming tasks and the two inhibition tasks used two separate matrices: a squares and circles matrix (see Figure 3); and, an up and down arrows matrix (see Figure 4). Please note that neither Figure 3 nor Figure 4 constitute copyright infringement of the NEPSY-II Inhibition subtest due to the fact that they are illustrations and have only been included for illustration purposes. The order of the tasks was as follows: the squares and circles naming task; the squares and circles inhibition task; the up and down arrows naming task; the up and down arrows inhibition task.

For the squares and circles naming task, pupils were required to look at the squares and circles matrix (see Figure 3) and name all of the shapes (e.g., “square”/“circle”) as though they were reading, i.e., from left to right and top to bottom. For the squares and circles inhibition task, pupils were again required to look at the squares and circles matrix, yet this time pupils were required to say “circle” when they saw a square and say “square” when they saw a circle.
For the up and down arrows naming task, pupils were required to look at the up and down arrows matrix (see Figure 4) and name all of the arrows (e.g., “up”/ “down”) as though they were reading, i.e., from left to right and top to bottom. For the up and down arrows inhibition task, pupils were again required to look at the up and down arrows matrix, yet this time pupils were required to say “down” when they saw an up arrow and say “up” when they saw a down arrow.

Hence, the naming and inhibition tasks are visual in modality, yet require pupils to give auditory responses. (See Table 5.1)

Figure 3. Illustration of the squares and circles matrix within the NEPSY-II Inhibition subtest
3.5.1.2.4. **Scoring and variables created**

The two naming tasks and two inhibition tasks mentioned above (see Section 3.5.1.2.3.) were scored as follows:

- If and when a pupil gave an incorrect auditory response during any of the four tasks, the NEPSY-II Inhibition subtest scoring sheet allowed the researcher to record both uncorrected and self-corrected errors, which were then combined to form an errors raw score for each of the four tasks. As there were 40 items within each matrix (see Figures 3 and 4), the maximum errors raw score that pupils could have received on each task was 40;

- Once the pupils began each of the four tasks, they were timed by the researcher from beginning to end using a stopwatch. Pupils were allowed a maximum of 180-seconds per task and received a
completion time raw score in seconds, i.e., the maximum completion time raw score that pupils could have received on each task was 180;

- For both of the naming and both of the inhibition tasks, the two errors raw scores were combined to form a naming total errors raw score and an inhibition total errors raw score. Hence, the maximum naming/ inhibition total errors raw score that pupils could have received was 80;

- For both of the naming tasks and both of the inhibition tasks, the two completion time raw scores were combined to form a naming total completion time raw score and an inhibition total completion time raw score. Hence, the maximum naming/ inhibition total completion time raw score that pupils could have received was 360;

- The researcher used Table A.1 in the NEPSY-II scoring manual to translate pupils’ naming and inhibition total errors raw scores into percentile ranks, relative to their age category. However, rather than the NEPSY-II scoring manual generating an interval percentile rank (i.e., from 1 to 100), it instead generates one of seven ordinal percentile rank categories: <2; 2-5; 6-10; 11-25; 26-50; 51-75; and, >75. Therefore, in order to classify the ordinal percentile rank categories as interval data, the lowest percentile rank category (<2) received a score of 1 and the highest percentile rank category (>75) received a score of 7. Hence, higher naming/ inhibition total errors
percentile rank scores indicated better attention behaviours.

This therefore generated two variables which will henceforth be referred to as ‘Naming Total Errors Percentile Rank’ and ‘Inhibition Total Errors Percentile Rank’.

- The researcher used Table A.1 in the NEPSY-II scoring manual to translate pupils’ naming and inhibition total completion time raw scores into scaled-scores, relative to their age category, whereby the NEPSY-II scoring manual generated an interval scaled-score between 1 and 19, with higher scaled-scores indicating better attention behaviours.

This therefore generated two variables which will henceforth be referred to as ‘Naming Total Completion Time Scaled-Score’ and ‘Inhibition Total Completion Time Scaled-Score’.

- The researcher used Tables B.10 and B.11 in the NEPSY-II scoring manual to translate the Naming Total Errors Percentile Rank and the Naming Total Completion Time Scaled-Score into a naming combined scaled-score, and the Inhibition Total Errors Percentile Rank and the Inhibition Total Completion Time Scaled-Score into an inhibition combined scaled-score. The NEPSY-II scoring manual generated an interval scaled-score between 1 and 19 for the naming combined scaled score and the inhibition combined scaled score,
with higher scaled-scores indicating better attention behaviours.

This therefore generated two variables which will henceforth be referred to as ‘Naming Combined Scaled-Score’ and ‘Inhibition Combined Scaled-Score’.

- The researcher used Table C.6 in the NEPSY-II scoring manual to translate the Naming Combined Scaled-Score and the Inhibition Combined scaled score into a contrast scaled-score, whereby the NEPSY-II scoring manual generated an interval scaled-score between 1 and 19, with higher scaled-scores indicating better attention behaviours.

- This therefore generated one variable which will henceforth be referred to as ‘Naming vs. Inhibition Contrast Scaled-Score’.

For a diagrammatical representation of the relationship between the seven variables generated from the naming and inhibition sections of the NEPSY-II Inhibition subtest, see Figure 5.
Figure 5. Diagrammatical representation of the relationship between the seven variables generated from the naming and inhibition sections of the NEPSY-II Inhibition subtest

It is worth noting that if practice effects were observed within any of the first four variables within Figure 5, not only would this bring into question the validity of any intervention or follow-up effects observed within these variables, but this would lead to practice effect contamination within the middle two variables and the final variable. Specifically:

- If a practice effect was observed within either the Naming Total Errors Percentile Rank variable or the Naming Total Completion Time Scaled-Score variable, this would lead to practice effect contamination within the Naming Combined Scaled-Score Variable and would bring into question the validity of any intervention or follow-up effects observed within this variable;
• If a practice effect was observed within either the Inhibition Total Errors Percentile Rank variable or the Inhibition Total Completion Time Scaled-Score variable, this would lead to practice effect contamination within the Inhibition Combined Scaled-Score Variable and would bring into question the validity of any intervention or follow-up effects observed within this variable;

• If either the Naming Combined Scaled-Score variable or the Inhibition Combined Scaled-Score variable had practice effect contamination, this would also lead to practice effect contamination within the Naming vs. Inhibition Contrast Scaled-Score variable and would also bring into question the validity of any intervention or follow-up effects observed within this variable.

3.5.1.1.2.5. **Piloting**

The researcher piloted the naming and inhibition sections of the NEPSY-II Inhibition subtest with five Year-4 pupils from Mill Hill Primary Academy prior to the main study without recording pupils’ names or dates of birth (for confidentiality purposes) in order to establish the convenience of the measure relative to the time it would take the researcher to complete. The researcher anticipated that it would take less than 3-hours and 30-minutes to complete the naming and inhibition sections of the NEPSY-II Inhibition subtest for all pupils at each time-point and less than 14-hours in total across the four time-points.
3.5.1.2. **Data gathering methods for RQ2**

There were three data gathering methods for RQ2: the Quality of Work Produced in Class questionnaire (see Appendix 2), which was developed by the researcher to assess pupils’ work quality on a weekly basis; and, pupils’ National Curriculum (DfE, 2013) levels of progress in literacy and numeracy (see Appendix 3), which assessed pupils’ academic attainment on a half-termly basis. The Quality of Work Produced in Class questionnaire and pupils’ literacy and numeracy levels were teacher-reported. All three data gathering methods will be discussed in terms of links with literature, comparison to similar data gathering methods, participant requirement, scoring and variables created, and piloting. (See Section 3.5.3. for a summary for the data gathering methods for RQ2.)

3.5.1.2.1. **Quality of Work Produced in Class questionnaire**

3.5.1.2.1.1. **Links with literature**

Greenberg and Harris (2012) state that where research has been conducted to investigate the effects of meditation-based interventions using mainstream populations, they have tended to suffer from problems in measurement; specifically, a lack of educational outcomes (see Section 2.10.). Black et al. (2009) also emphasise the need to measure the impact of meditation on aspects of positive functioning within mainstream populations (e.g., academic output; see Section 2.10.). Furthermore, there is a well-established link between impoverished environmental input within the classroom, Primary School aged pupils’ failure to realise their underlying attentional potential, and poor academic progress (see Section 2.3.). The researcher therefore decided that it would be important to evaluate the impact of the Paws .b mindfulness programme on mainstream
Primary School aged pupils’ academic proxy measures, as well as their attention.

To this effect, the Quality of Work Produced in Class questionnaire was created by the researcher so as to be high in face validity relative to assessing pupils’ work quality, which the researcher deemed to be a valid dimension of pupils’ academic output.

3.5.1.2.1.2. **Comparison to similar data gathering methods**

The researcher was unable to find any pre-existing teacher-reported measures of pupils’ work quality against which the researcher could compare the Quality of Work Produced in Class questionnaire. Hence, as the suitability of the Quality of Work Produced in Class questionnaire was unable to be established through comparison to similar data gathering methods, its suitability was assessed through piloting (see Section 3.5.1.2.1.5. below).

3.5.1.2.1.3. **Participant requirements**

The experimental teacher and the waitlist control teachers were required to complete the Quality of Work Produced in Class questionnaire for each of their pupils every week throughout the half term prior to the four time-points (see Section 3.5.3.).

As can be seen in Appendix 2, the experimental teacher and the waitlist control teachers were required to rate the quality of pupils’ work produced in class on a weekly basis using a 5-point likert scale, which included the following descriptors: ‘Outstanding’; ‘Good’; ‘Satisfactory’; ‘Requires improvement’; and, ‘Inadequate’. All descriptors except ‘Satisfactory’ were
taken from the most recent school inspection framework (Ofsted, 2014), whereby ‘Satisfactory’ was chosen due to it being a neutral mid-point descriptor, with ‘Outstanding’ and ‘Good’ being positive descriptors, and with ‘Requires improvement’ and ‘Inadequate’ being negative descriptors. (See Table 5.2)

3.5.1.2.1.4. **Scoring and variables created**

The five descriptors within the Quality of Work Produced in Class questionnaire were positively coded so that the descriptor ‘Outstanding’ received a score of 5; ‘Good’ received a score of 4; ‘Satisfactory’ received a score of 3; ‘Requires improvement’ received a score of 2; and, ‘Inadequate’ received a score of 1. However, because there were different numbers of weeks in the half terms prior to the four time-points, the mean of the experimental teacher and the waitlist control teachers’ ratings were calculated for each pupil. Hence, higher scores on the Quality of Work Produced in Class questionnaire indicated better work quality, whereby the lowest possible score was 1 and the highest possible score was 5.

Because of the above scoring systems, the Quality of Work Produced in Class data collected at each of the four time-points were classified as interval data.

This therefore generated one variable which will henceforth be referred to as ‘Quality of Work Produced in Class’.

3.5.1.2.1.5. **Piloting**

The researcher piloted the Quality of Work Produced in Class questionnaire with a Year-4 class teacher from Mill
Hill Academy prior to the main study in order to establish the suitability relative to a class teacher’s perception of its face validity, and the convenience of the measure relative to the time it would take the class teachers to complete. The researcher first asked the pilot teacher whether the Quality of Work Produced in Class questionnaire would accurately assess class teachers’ weekly perceptions of their pupils’ work quality, to which the pilot teacher felt that it would, thus establishing its suitability. The researcher then asked the pilot teacher to complete the Quality of Work Produced in Class questionnaire for five pupils, without naming them (for confidentiality purposes). The researcher anticipated that it would take less than 10-minutes for the experimental teacher and waitlist control teachers to complete the Quality of Work Produced in Class questionnaire for all pupils at each time-point and less than 40-minutes in total across the four time-points.

3.5.1.2.2. **Literacy and numeracy National Curriculum levels of progress**

3.5.1.2.2.1. **Links with literature**
See Section 3.5.1.2.1.1. for a discussion of the rationale behind assessing pupils’ academic proxy measures, as well as their attention.

To this effect, pupils’ National Curriculum levels of progress in literacy and numeracy were collected by the researcher due to being high in face validity relative to assessing pupils’ literacy and numeracy skills, which the researcher deemed to be two valid dimensions of pupils’ academic output.
3.5.1.2.2.2. **Comparison to similar data-gathering methods**
As pupils’ literacy and numeracy levels of progress were derived directly from the Primary School National Curriculum, the researcher was unable to find any measure of pupils’ literacy and numeracy skills that were both endorsed by the Department for Education and widely used in Primary Schools. Nonetheless, the suitability of the Literacy and Numeracy variables was established due to them arising from assessment processes deeply engrained within the assessment policies and procedures of Harry Close Primary Academy and due to them being based on the Primary School National Curriculum.

3.5.1.2.2.3. **Participant requirements**
As can be seen in Appendix 3, the researcher recorded the number of National Curriculum sub-level descriptors that pupils had achieved in literacy (i.e., writing), as well as pupils’ National Curriculum level and sub-level in numeracy, at each of the four time-points. The experimental teacher and the waitlist control teachers were therefore required to allow the researcher to gain access to their literacy and numeracy assessment files which were updated at every time-point as part of their assessment roles within Harry Close Primary Academy. (See Table 5.2)

3.5.1.2.2.4. **Scoring and variables created**
The National Curriculum levels of progress in literacy were positively coded (i.e., as the total number of sub-level descriptors that each pupil had achieved increased, so too did their National Curriculum level of progress in literacy). Hence, greater scored indicated higher levels of
attainment in literacy, whereby the lowest possible score was 1 (i.e., one sub-level descriptor) and the highest score likely to be achieved by a Year-4 pupil within the context of Harry Close Primary Academy was 68 (i.e., the number of sub-level descriptors required for a pupil to be awarded a National Curriculum level-4 in literacy).

The National Curriculum levels of progress in numeracy were also positively coded, whereby the first level and sub-level of progress (i.e., a level-1C) received a score of 1, the next level and sub-level of progress (i.e., a level-1C+) received a score of 2, the next level and sub-level of progress (i.e., a level-1B) received a score of 3, and so on. Hence, greater scores indicated higher levels of attainment in numeracy, whereby the lowest possible score was 1 (i.e., a level-1C) and the highest score likely to be achieved by a Year-4 pupil within the context of Harry Close Primary Academy was 24 (i.e., a level-4A+).

Because of the above scoring systems, the literacy and numeracy National Curriculum levels of progress data collected at each of the four time-points were classified as interval data.

This therefore generated two variables which will henceforth be referred to as ‘Literacy’ and ‘Numeracy’.

3.5.1.2.2.5. Piloting

It was not considered necessary to pilot the researcher’s collection of pupils’ literacy and numeracy National Curriculum levels of progress due to the experimental teacher and the waitlist control teachers only being required to allow the researcher to gain access to their
literacy and numeracy assessment files at each of the four time-points.

3.5.2. **Qualitative data gathering methods**

3.5.2.1. **Data gathering methods for RQ3**

There were two data gathering methods for RQ3: FGs took place with a sub-sample of experimental and waitlist control pupils at Time-1 and Time-2, respectively (see Appendix 4); and, semi-structured interviews took place with the experimental teacher at Time-1, and with the waitlist control teachers and the mindfulness teacher at Time-2 (see Appendix 5). Both data gathering methods will be discussed in terms of links with literature, comparison to similar data gathering methods, participant requirement, scoring and variables created, and piloting. (See Section 3.5.3. for a summary for the data gathering methods for RQ3.)

3.5.2.1.1. **Pupil FGs**

3.5.2.1.1.1. **Links with literature**

According to Barbour (2007), the role of the researcher during the FGs was to act as a moderator and prompt pupils to talk amongst themselves, as well as pick up on/explore differences in opinion and form a consensus (p. 2-3). Relative to this, the researcher created a FG topic guide to help encourage discussion (see Appendix 4).

Furthermore, Barbour (2007) would argue that the only views expressed by pupils were those that were salient to them (p. 32), and that multiple voices could still be heard (p. 33). Furthermore, Barbour (2007) suggests that holding FGs with pre-acquainted participants can facilitate more rounded and reasoned responses to
discussion questions. Hence, the validity of the data gathered in FGs was high.

3.5.2.1.1.2. **Comparison to similar data gathering methods**

According to Cohen et al. (2008), FGs require less backwards and forwards question and answer compared to group interviews and rely more on open group discussion and interaction, and thus contain more collective views (p. 436). FGs are also more economical than a series of pupil interviews, and are less intimidating to pupils (p. 436). Hence, the suitability of FGs was established.

3.5.2.1.1.3. **Participant requirements**

A sub-sample of eight experimental and eight waitlist control pupils were required to take part in a 30-minute FG at Time-1 and Time-2, respectively. As each sub-sample of pupils consisted of four boys and four girls, four 30-minute FGs took place: one with the four boys from the sub-sample of experimental pupils; one with the four girls from the sub-sample of experimental pupils; one with the four boys from the sub-sample of waitlist control pupils; and, one with the four girls from the sub-sample of waitlist control pupils. The rationale for holding single gender FGs pertained to suggestions made by the experimental teacher and the waitlist control teachers based on their experiences of facilitating optimal discussions between their pupils.

The researcher acted as moderator and each 30-minute FG consisted of the pupils being series of questions, one of which required the pupils to undertake a pen and paper activity to help stimulate discussion (see Appendix 4).
3.5.2.1.4. Data handling and processing
The two pupil FGs were audio recorded and partially transcribed.

3.5.2.1.2. Teacher semi-structured interviews

3.5.2.1.2.1. Links with literature
According to Robson (2002), the role of the researcher within a semi-structured interview was to create a series of predetermined questions (see Appendix 5), yet modify the order of such questions accordingly, whilst changing their wording or providing explanations. The researcher was also required to omit any inappropriate questions if necessary, yet otherwise pose additional follow-up questions (p. 270).

3.5.2.1.2.2. Comparison to similar data gathering methods
According to Cohen et al. (2008, p. 411-415), semi-structured interviews require greater participant involvement and thus engender higher levels of participant motivation than open-ended questionnaires. Furthermore, a semi-structured interview, in comparison to an open-ended questionnaire, will allow the researcher to probe more deeply into teachers’ answers and to follow up noteworthy comments with further questions. Hence, the suitability of the semi-structured interviews was established.
3.5.2.1.2.3. **Participant requirements**

The experimental teacher, and the waitlist control teachers and the mindfulness teacher, were required to take part in a semi-structured interview of approximately 1-hour at Time-1 and Time-2, respectively, with the researcher acting as interviewer (see Appendix 5). (See Table 5.3)

3.5.2.1.2.4. **Data handling and processing**

The two pupil FGs were audio recorded and partially transcribed.

3.5.3. **Summary of data gathering methods**

<table>
<thead>
<tr>
<th>RQ</th>
<th>Data gathering method</th>
<th>Participants</th>
<th>Participant requirement</th>
<th>Time-points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attention Checklist (quantitative)</td>
<td>Experimental teacher and waitlist control teachers</td>
<td>Complete the Attention Checklist for all pupils by rating 12 observable attention behaviours on a 4-point likert scale.</td>
<td>Baseline; Time-1; Time-2; Time-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Naming and inhibition sections of the NEPSY-II Inhibition subtest (quantitative)</td>
<td>Experimental and waitlist control pupils</td>
<td>Complete the following tasks in the same order: the squares and circles naming task; the squares and circles inhibition task; the up and down arrows naming task; then, the up and down arrows inhibition task.</td>
<td>Baseline; Time-1; Time-2; Time-3</td>
</tr>
</tbody>
</table>
Table 5.2. Summary of data gathering methods and participant requirements for RQ2

<table>
<thead>
<tr>
<th>RQ</th>
<th>Data gathering method</th>
<th>Participants</th>
<th>Participant requirement</th>
<th>Time-points</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Quality of Work Produced in Class questionnaire (quantitative)</td>
<td>Experimental teacher and waitlist control teachers</td>
<td>Complete the Quality of Work Produced in Class questionnaire for all pupils on a weekly basis throughout the half term prior to each of the four time-points by rating the quality of pupils’ work produced in class on a 5-point likert scale.</td>
<td>Baseline; Time-1; Time-2; Time-3</td>
</tr>
<tr>
<td></td>
<td>National Curriculum levels of progress in literacy and numeracy (quantitative)</td>
<td>Experimental teacher and waitlist control teachers</td>
<td>Allow the researcher to gain access to literacy and numeracy assessment files</td>
<td>Baseline; Time-1; Time-2; Time-3</td>
</tr>
</tbody>
</table>
### Table 5.3. Summary of data gathering methods and participant requirements for RQ3

<table>
<thead>
<tr>
<th>RQ</th>
<th>Data gathering method</th>
<th>Participants</th>
<th>Participant requirement</th>
<th>Time-points</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>FG (qualitative)</td>
<td>A sub sample of eight experimental pupils and eight waitlist control pupils</td>
<td>Take part in a 30-minute FG moderated by the researcher</td>
<td>Time-1 (experimental pupils);</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Time-2 (waitlist control pupils)</td>
</tr>
<tr>
<td></td>
<td>Semi-structured interview (qualitative)</td>
<td>Experimental teacher, waitlist control teachers, and mindfulness teacher</td>
<td>Take part in a semi-structured interview of approximately 1-hour with the researcher acting as interviewer</td>
<td>Time-1 (experimental teacher);</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Time-2 (waitlist control teachers and mindfulness teacher)</td>
</tr>
</tbody>
</table>

#### 3.6. Data analysis methods

As discussed in Section 3.3, the researcher opted for a quasi-mixed methods design (see Teddlie & Tashakkori, 2009, p. 142), in that quantitative methods were used for confirmatory means to answer RQ1 and RQ2, and qualitative methods were used for exploratory means to answer RQ3, relative to the suggestion of Onwuebuzie and Leech (2005, p. 382). Hence, the data analysis methods section will be discussed in terms of the quantitative data analysis methods used to answer RQ1 and RQ2, and the qualitative data analysis methods used to answer RQ3.

#### 3.6.1. Quantitative data analysis methods

Within the present study, SPSS® Statistics 20 (IBM®, 2012) was chosen for the purpose of quantitative data analysis.
3.6.1.1. **Computation**
The quantitative data gathered for the purpose of answering RQ1 generated eight variables, i.e., one Attention Checklist variable and the seven NEPSY-II Inhibition subtest variables (see Sections 3.5.1.1.1.4. and 3.5.1.1.2.4., respectively). The quantitative data gathered for the purpose of answering RQ2 generated three variables, i.e., the Quality of Work Produced in Class variable and the Literacy and Numeracy variables (see Sections 3.5.1.2.1.4. and 3.5.1.2.2.4., respectively).

3.6.1.2. **Types of comparison**
All data generated by the eight RQ1 variables and the three RQ2 variables were subject to within- and between-condition comparisons at each of the four time-points, whereby there were two levels of within-condition comparisons: per condition (i.e., by treating the experimental group and WCG as separate groups in order to look for intervention and follow-up effects within each condition); and, per total sample (i.e., by treating the experimental group and the WCG as one group by combining their pre-intervention, post-intervention and follow-up data in order to look for intervention and follow-up effects within the total sample).

3.6.1.3. **Descriptive statistics**
The data generated by the eight RQ1 variables and the three RQ2 variables were subject to the same process of descriptive statistical analysis at each of the four time-points, which consisted of: calculating variables’ means as one measure of central tendency; calculating the standard deviations of variables’ means and variables’ ranges as two measures of dispersion; calculating the standard error of variables’ means as one measure of sampling variation; and, calculating the within- and between-condition percentage changes in variables’ means as one measure of variable change.
3.6.1.4. **Non-parametric inferential statistics**

In accordance with Field (2005, p. 63-106), all data generated by the eight RQ1 variables and the three RQ2 variables were subject to the same process of quantitative data analysis screening using in order to ascertain whether the data were parametric (i.e., normally distributed). However, as the data did not meet the assumptions of parametricity (i.e., the data were not normally distributed), the researcher decided to use non-parametric inferential statistics in order to answer RQ1 and RQ2.

Non-parametric inferential statistics work on the principle of ranking data so that high scores are given large ranks and low scores are given small ranks. The analysis is then carried out on the ranks rather than the data. Hence, you are able to subject non-parametric data to inferential statistical analysis as it is their ranks, rather than the data themselves, that are analysed (Field, 2005, p.521).

In accordance with Field (2005, p. 534-542), the Wilcoxon signed-rank test (Wilcoxon, 1945) was chosen for the purpose of the within-condition comparisons (i.e., per condition and per total sample), whereby the ‘exact method’ was chosen to calculate the significance of the Wilcoxon signed-rank test, as opposed to the ‘asymptotic method’, due to the small sample size and the fact that the data were not normally distributed (Field, 2005, p. 528). The Wilcoxon signed-rank test statistic is denoted by ‘T’ and is reported with median condition scores as opposed to the mean condition scores due to it being a non-parametric inferential statistical test.

In accordance with Field (2005, p. 522-534), the Mann-Whitney test (Mann & Whitney, 1947) was chosen for the purpose of the between-condition comparisons, whereby the ‘exact method’ was again chosen to calculate the significance of the Mann-Whitney test. The Mann-Whitney test statistic is denoted by ‘U’ and is reported
with median condition scores as opposed to the mean condition scores due to it being a non-parametric inferential statistical test.

In terms of statistical power, Cohen (1992) states that \( n = 28 \) participants are required to detect a large effect size (i.e., \( r = .5 \)), \( n = 85 \) participants are required to detect a medium effect size (i.e., \( r = .3 \)), and \( n = 783 \) participants are required to detect a small effect size (i.e., \( r = .1 \)). Hence, given the current sample size of \( n = 30 \) participants, there was sufficient statistical power to detect a large, but not a medium, effect size. Furthermore, non-parametric inferential statistical tests only have less statistical power than parametric inferential statistical tests if the assumptions of parametricity are met within the data (Field, 2005, p.533-534). Therefore, as the current data did not meet the assumptions of parametricity, there was sufficient statistical power to detect a large effect size, regardless of the use of non-parametric inferential statistical tests.

In terms of how to calculate effect sizes, Rosenthal (1991, p. 19) proposed a method for calculating estimated effect sizes when using non-parametric inferential statistics. Rosenthal’s formula was as follows:

\[
    r = Z \div (\sqrt{n})
\]

Thus, upon using the Wilcoxon signed-rank test or the Mann-Whitney test within SPSS® Statistics 20, the researcher selected the Z-score from the SPSS output and divided it by the square root of 28 (i.e., the number of participants within the present study; see Field, 2005, p. 531-532). Hence, in order to have achieved a large estimated effect size of \( r \geq .5 \), a Z-score of \( \geq 2.65 \) was required.
Lastly, as the researcher made *a priori* hypotheses about which group would differ from which (see Section 4.1.1. below), 1-tailed significance values were selected.

3.6.2. **Qualitative data analysis methods**

The qualitative data gathered for the purpose of answering RQ3, i.e., the four partially transcribed pupils FGs and the three partially transcribed teacher semi-structured interviews (see Section 3.5.2.1.), were subject to Braun and Clarke’s (2006) six phase TA.

In relation to the researcher’s decision to use partial transcription as opposed to full transcription, McLellan, MacQueen and Nedig (2003) state that ‘the exploration of general themes and patterns can be undertaken with less text’ (p. 67), i.e., partial transcription is appropriate for the purpose of TA.

As the researcher chose to utilise a quasi-mixed methods design, qualitative data gathering methods were chosen for the sole purpose of answering RQ3 (see Sections 3.3. and 3.5.2.). Hence, the researcher opted to use theoretical TA, as opposed to inductive TA, and coded the partially transcribed FG and semi-structured interview transcripts according to a pre-existing RQ (i.e., the researcher only coded sections of transcript that were relevant to RQ3). Furthermore, given the researchers critical realist ontological stance and their assumption of the direct link between meaning/experience and language, themes were identified at the semantic level, as opposed to the latent level, as the researcher wanted to reflect, as opposed to unravel, the reality that they had observed during the FGs and semi-structured interviews. (See Braun & Clarke, 2006.)
3.6.3. **Summary of data analysis methods**

<table>
<thead>
<tr>
<th>RQ</th>
<th>Data gathering method</th>
<th>Time-points</th>
<th>Data analysis methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attention Checklist (quantitative)</td>
<td>Baseline; Time-1; Time-2; Time-3</td>
<td>- Within-condition comparisons (per condition) using the Wilcoxon signed-rank test (Wilcoxon, 1945);</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Within-condition comparisons (per total sample) using the Wilcoxon signed-rank test (Wilcoxon, 1945);</td>
</tr>
<tr>
<td></td>
<td>Naming and inhibition sections of the NEPSY-II Inhibition subtest (quantitative)</td>
<td>Baseline; Time-1; Time-2; Time-3</td>
<td>- Between-condition comparisons using the Mann-Whitney test (Mann &amp; Whitney, 1947).</td>
</tr>
<tr>
<td>2</td>
<td>Quality of Work Produced in Class questionnaire (quantitative)</td>
<td>Baseline; Time-1; Time-2; Time-3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National Curriculum levels of progress in literacy and numeracy (quantitative)</td>
<td>Baseline; Time-1; Time-2; Time-3</td>
<td></td>
</tr>
</tbody>
</table>
Table 6.2. Summary of data analysis methods for RQ3

<table>
<thead>
<tr>
<th>RQ</th>
<th>Data gathering method</th>
<th>Time-points</th>
<th>Data analysis methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FG (qualitative)</td>
<td>Time-1 (experimental pupils); Time-2 (waitlist control pupils)</td>
<td>• Braun and Clarke’s (2006) six phase TA.</td>
</tr>
<tr>
<td></td>
<td>Semi-structured interview (qualitative)</td>
<td>Time-1 (experimental teacher); Time-2 (waitlist control teachers and mindfulness teacher)</td>
<td></td>
</tr>
</tbody>
</table>

(For a diagrammatical representation of the data gathering methods and the types of comparison, see Appendix 6.)

3.7. Critique of methodology

3.7.1. Critique of design

3.7.1.1. Use of a RCT

In order for a clear link to be made between the Paws .b mindfulness programme and any changes in the abovementioned outcome measures, Cohen et al. (2008) suggest that RCTs have ‘considerable potency in establishing causation’ (p. 66) due to the ability of the researcher to isolate and manipulate a single independent variable and evaluate its impact on the outcome
measures. Hence, the researcher’s utilisation of a quasi-mixed methods RCT design was an appropriate choice in terms of answering RQ1 and RQ2, and establishing causation.

3.7.1.2. **Use of quasi-experimental intervention cross-lag**

Within the present context of real-world research, efforts must be made to limit Hawthorne effects as they can ‘[oversimplify] the variables at work in a situation, override the influence of mediating or process variables, neglect participants’ motives and motivations [and] neglect the context in which the action is located’ (Cohen et al., 2008, p. 66). Hence, the researcher utilised a quasi-experimental intervention cross-lag with a single mindfulness teacher to mitigate possible Hawthorne effects, whereby the quasi-experimental intervention cross-lag ensured that both Year-4 classes received the input (i.e., the Paws .b mindfulness programme delivered by the same mindfulness teacher), but at different time-points. Thus, as both Year-4 classes and their class teachers received the same input from the researcher and the mindfulness teacher, this will allow for within- and between-condition statistical analyses.

Nonetheless, whilst attempts were made to mitigate Hawthorne effects, the researcher acknowledges that beyond the quasi-experimental intervention cross-lag, these may have been unavoidable within the present study and will be duly noted in the discussion chapter.

3.7.1.3. **Inclusion of follow-ups**

The utilisation of four time-points as detailed above means that the experimental group had an 8-week follow-up at Time-2 and a 14-week follow-up at Time-3, whereas the WCG had a 6-week follow-up at Time-3. Hence, whilst it is a methodological strength that the researcher included follow-ups, they do not meet Greenberg and Harris’ (2012) recommendation that studies include a long-term follow-up of at least 6-months.
3.7.1.4. **Single context**  
While limitations of previous research into the effects of mindfulness on attention centre on the use of single contexts, the present study is open to the same criticism. Whilst the evaluation of the impact of the Paws .b mindfulness programme within the UK context contributes to a knowledge gap, there are limitations in terms of generalisability of the findings to non-UK contexts.

3.7.1.5. **Sample**  
The present sample consisted entirely of male and female Year-4 pupils who had English as an additional language, thus limiting the generalisability of the findings for single gender schools, different year groups, and pupils who do not have English as an additional language.

Whilst the present sample was large enough to infer large effect sizes (see Section 3.6.1.4.), it was limited to the number of children whose parents/ carers provided opt-in consent and is by no means a large sample. Not only does this restrict the breadth of effect sizes that the researcher is able to infer from the present study, but the present study is open to the same criticism as other studies researching the effects of mindfulness on attention regarding sample size.

Furthermore, although the experimental group and WCG were roughly similar in terms of mean age at Baseline, they were different in terms of the proportion of females and males, with the experimental group having proportionally more males than females, whilst the WCG had proportionally more females than males. Thus, aside from English as an additional language status, age, and school context, no other attempts were made to match the experimental group and the WCG.
3.7.1.6. **Measures**

Whilst the NEPSY-II (Korkman, Kirk & Kemp, 2007) is a norm-referenced and standardised neuropsychological assessment battery, the Attention Checklist (Das, 2002; see Appendix 1) has not been standardised within the UK context and thus its validity in terms of assessing suppressing and sustaining attention within the UK context can be brought into question. Furthermore, whilst the Literacy and Numeracy data are grounded in objective assessment processes within Harry Close Primary Academy, the Quality of Work Produced in Class questionnaire is distinctly subjective and open to class teachers’ interpretations of their pupils’ work quality.

3.7.2. **Critique of Paws .b mindfulness programme**

In relation to the use of the Paws .b mindfulness programme as a manualised mindfulness programme, Burke (2010) states that ‘*there are distinct advantages in researchers adhering to standardized intervention formats…as this can allow for replication studies across multiple site and conditions, from which meaningful comparisons can be made, expanding the evidence base.*’ (p. 143). Furthermore, as the Paws .b mindfulness programme was developed in North Wales (Mindfulness in Schools Project, 2013a), it was intended for use within the UK context, meaning that findings of the research will be able to be interpreted within Paws .b’s intended geographical context and any findings should generalise well to similar Year-4 UK populations.

However, given that Napoli et al. (2005) was identified as the closest match study, it is perhaps concerning that they concluded that ‘*the facilitator should keep in mind that repetition of practice is key to actually developing mindfulness [and a] consistent series of 8-10 classes is needed for a basic development of practice*’ (p. 116), whereby the Paws .b mindfulness programme is only six lessons in length following the reincarnation of the nine lesson .b for teens mindfulness programme (Mindfulness in Schools Project, 2013b; see Section 3.3.4.). Nonetheless, Carmody and Baer (2009) found no significant correlation between
length of intervention and outcomes in clinical and non-clinical adult
groups who had received MBSR to help treat psychological distress.

3.8. **Time-line and time budget**

See Appendix 18.

3.9. **Operational risk analysis**

See Appendix 19.

3.10. **Ethics**

As demonstrated in Appendix 20, the level of ethical risk within the present
study was assessed to be medium. There were two reasons for this
assessment: firstly, the present study involved the researcher coming into
direct contact with children (i.e., through administering the naming and
inhibition sections of the NEPSY-II Inhibition subtest; see Section 3.5.1.1.2.;
and, through the pupil FGs; see Section 3.5.2.1.1.); secondly, the mindfulness
teacher required specific training before fieldwork began (i.e., training
delivered by the Mindfulness in Schools Project in order to deliver the Paws .b
mindfulness programme). Following the submission of Appendices 20 and
21 to the University of Manchester’s ethics department, ethical approval was
received on 03/09/2013.

However, the researcher made changes to the original research plan.
Specifically, the original research plan stated that the researcher would need
to ask parents/ carers to consent to their child taking part in the Paws .b
mindfulness program, as well as consent to information being collected about
their child. However, as discussed in Section 3.4.2., as Harry Close Primary
Academy had already decided that it would introduce the Paws .b
mindfulness programme into its Year-4 curriculum, the researcher was no
longer required to ask parents/ carers to consent to their child taking part in
Paws .b, but was still required to ask parents/ carers to consent to information
being collected about their child. Because of this, the researcher added an
amendment to Appendices 20 and 21, and resubmitted them to the University
of Manchester’s ethics department. Ethical approval was received on 12/11/2013.

3.11. **Summary**

In summary, a rationale for the present study was presented and a detailed discussion of the researcher’s adoption of a critical realist ontological stance was included. The design of the present study was highlighted, whereby particular attention was paid to implementation and the content of the Paws .b mindfulness programme. The process of participant recruitment was detailed and the sample for the present study was described. The quantitative and qualitative data gathering and data analysis methods were both outlined and evaluated. Finally, a thorough critique of the methodological design and the Paws .b mindfulness programme was included, as well as references to the appendices relevant to the time-line and time budget, the operational risk analysis, and ethics.
CHAPTER 4 – Results

Relative to Section 3.3., quantitative methods were used for confirmatory means to answer RQ1 and RQ2, and qualitative methods were used for exploratory means to answer RQ3 (Onwuegbuzie & Leech, 2005, p. 382). Hence, the results chapter begins with the quantitative data analysis section before moving on to the qualitative data analysis section. The quantitative data analysis section seeks to answer RQ1 and RQ2 by detailing how the descriptive and non-parametric inferential statistics for each of the RQ1 and RQ2 variables relate to the relevant a priori hypotheses, whereas the qualitative data analysis section seeks to answer RQ3 by detailing the themes and sub-themes that pertain to it. The results section will conclude with triangulation of quantitative and qualitative data.

4.1. Quantitative data analysis

For the purpose of the quantitative data analysis section, and as stated in Section 3.1., RQ1 and RQ2 are as follows:

*RQ1. To what extent does the Paws .b mindfulness programme lead to an improvement in mainstream Primary School aged pupils’ suppressing and sustaining attention skills?*

*RQ2. To what extent does the Paws .b mindfulness programme lead to an improvement in mainstream Primary School aged pupils’ academic proxy measures?*

4.1.1. A priori hypotheses for the RQ1 and RQ2 variables

As discussed in Section 3.6.1.2., there were two levels of within-condition comparison: per condition; and, per total sample, as well as one level of between-condition comparison.

4.1.1.1. A priori hypotheses for the within-condition comparisons (per condition) in the experimental group and WCG

The researcher’s a priori hypothesis for the within-condition comparisons (per condition) in the experimental group was that
RQ1 and RQ2 variable scores would increase significantly from pre-intervention to post-intervention (within-condition experimental group criterion 1), and that these intervention effects would be maintained at follow-up 1 (within-condition experimental group criterion 2) and follow-up 2 (within-condition experimental group criterion 3). The researcher’s a priori hypothesis for the within-condition comparisons (per condition) in the WCG was that RQ1 and RQ2 variable scores would not increase significantly from pre-intervention to pre-intervention (within-condition WCG criterion 1), but that they would increase significantly from pre-intervention to post-intervention (within-condition WCG criterion 2), and that these intervention effect would be maintained at follow-up 1 (within-condition WCG criterion 3).

The rationale behind the hypotheses for the within-condition comparisons (per condition) was that significant increases in RQ1 and RQ2 variable scores should have been observed by the time that the experimental group and WCG had finished receiving the Paws .b mindfulness programme (i.e., by post-intervention), and that neuroplastic changes resulting from the Paws .b mindfulness programme should have maintained these intervention effects at both the 6- to 8-week follow-up and the 14-week follow-up. However, in the WCG, RQ1 and RQ2 variable scores should not have increased significantly between pre-intervention and pre-intervention as the WCG had yet to receive the Paws .b mindfulness programme.

For a summary of the a priori hypotheses for the within-condition comparisons (per condition), see Table 7.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Pre-intervention</th>
<th>Post-intervention</th>
<th>Follow-up 1</th>
<th>Follow-up 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1 and RQ2 variables</td>
<td>Experimental group</td>
<td></td>
<td>Significant increase from pre-intervention (within-condition experimental group criterion 1)</td>
<td>Intervention effect maintained (within-condition experimental group criterion 2)</td>
<td>Intervention effect maintained (within-condition experimental group criterion 3)</td>
</tr>
<tr>
<td>WCG</td>
<td>No significant increase from pre intervention (within-condition WCG criterion 1)</td>
<td>Significant increase from pre-intervention (within-condition WCG criterion 2)</td>
<td>Intervention effect maintained (within-condition WCG criterion 3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.1.1.2. **A priori hypotheses for the within-condition comparisons (per total sample)**

The researcher’s *a priori* hypothesis for the within-condition comparisons (per total sample) was that RQ1 and RQ2 variable scores would increase significantly from pre-intervention to post-intervention (*within-condition total sample criterion 1*), and that these intervention effects would be maintained at follow-up 1 (*within-condition total sample criterion 2*).
The rationale behind the hypothesis for the within-condition comparisons (per total sample) was that significant increases in RQ1 and RQ2 variable scores should have been observed by the time that the total sample had finished receiving the Paws .b mindfulness programme (i.e., by post-intervention), and that neuroplastic changes resulting from the Paws .b mindfulness programme should have maintained these intervention effect at the 6- to 8-week follow-up.

For a summary of the a priori hypotheses for the within-condition comparisons (per total), see Table 8.

Table 8. Summary of a priori hypotheses for within-condition comparisons (per total sample)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post-intervention</td>
</tr>
<tr>
<td></td>
<td>Follow-up 1</td>
</tr>
<tr>
<td>RQ1 and RQ2 variables</td>
<td>Significant increase from pre-intervention</td>
</tr>
<tr>
<td></td>
<td>(within-condition total sample criterion 1)</td>
</tr>
<tr>
<td></td>
<td>Intervention effect maintained</td>
</tr>
<tr>
<td></td>
<td>(within-condition total sample criterion 2)</td>
</tr>
</tbody>
</table>

4.1.1.3. A priori hypotheses for the between-condition comparisons

The researcher’s a priori hypothesis for the between-condition comparisons was that RQ1 and RQ2 variable scores would not differ significantly between the experimental group and the WCG at Baseline (between-condition criterion 1), Time-2 (between-condition criterion 3) or Time-3 (between-condition criterion 4), but that RQ1 and RQ2 variable scores would be significantly higher in the experimental group than the WCG at Time-1 (between-condition criterion 2).

The rationale behind the researcher’s a priori hypothesis for the between-condition comparisons was that the experimental group
and WCG had both yet to receive the Paws .b mindfulness programme at Baseline, and had both finished receiving the Paws .b mindfulness programme at Time-2 and Time-3. However, at Time-1, the experimental group had finished receiving the Paws .b mindfulness programme whilst the WCG were still yet to receive the Paws .b mindfulness programme because of the intervention cross-lag, hence why the researcher hypothesised that variable scores would be significantly higher in the experimental group than the WCG at Time-1.

For a summary of the a priori hypotheses for the between-condition comparisons, see Table 9.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
</tr>
<tr>
<td>RQ1 and RQ2 variables</td>
<td>No significant difference between experimental group and WCG (between-condition criterion 1)</td>
</tr>
</tbody>
</table>

4.1.1.4. **How the a priori hypotheses could highlight the presence of practice or maturation effects**

Relative to Table 7, if criterion 1 of the researcher’s a priori hypothesis for the within-condition comparisons (per condition) in
the WCG was disconfirmed, this would indicate either a practice effect or a maturation effect.

With reference to the eight RQ1 variables, if Attention Checklist scores increased significantly from pre pre-intervention to pre-intervention within the WCG (i.e., before the WCG had received the Paws .b mindfulness programme), this would highlight the presence of a maturation effect as it is possible that the waitlist control teachers rated pupils’ attention behaviours more positively at pre-intervention than at pre pre-intervention because pupils’ attention skills had matured over time. However, if any of the seven NEPSY-II Inhibition subtest scores increased significantly from pre pre-intervention to pre-intervention within the WCG (i.e., before the WCG had received the Paws .b mindfulness programme), this would highlight the presence of a practice effect as it is possible that the WCG got better at the four NEPSY-II Inhibition subtest tasks the second time they completed them (see Section 3.5.1.1.2.4.).

With reference to the three RQ2 variables, if Quality of Work Produced in Class/ Literacy/ Numeracy scores increased significantly from pre pre-intervention to pre-intervention within the WCG (i.e., before the WCG had received the Paws .b mindfulness programme), this would highlight the presence of a maturation effect as it is possible that the waitlist control teachers rated/ assessed pupils’ class work/ assessments more positively at pre-intervention than at pre pre-intervention because pupils’ academic skills had matured over time.

Thus, if a practice or maturation effect was noted within with the waitlist control teachers for any of the RQ1 or RQ2 variables, not only would this bring into question the validity of any intervention or follow-up effects observed within the WCG, but any intervention or follow-up effects within the experimental group the total sample
as well, as such effects could not be reliably attributed to the Paws mindfulness programme.

4.1.1.5. **How the a priori hypotheses could be fully or partially confirmed or disconfirmed**

Relative to Table 7, the researcher’s a priori hypothesis for the within-condition comparisons (per condition) in the experimental group would be:

- Fully confirmed if a RQ1 or RQ2 variable met all three criteria;
- Partially confirmed if a RQ1 or RQ2 variable met one or two of the criteria;
- Disconfirmed if a RQ1 or RQ2 variable did not meet any criteria (no intervention or follow-up effects).

Relative to Table 7, the researcher’s a priori hypothesis for the within-condition comparisons (per condition) in the WCG would be:

- Fully confirmed if a RQ1 or RQ2 variable met all three criteria;
- Partially confirmed if a RQ1 or RQ2 variable met criteria 1 and 2/ criteria 1 and 3;
- Disconfirmed if a RQ1 or RQ2 variable met criteria 2 and 3, or criterion 2 or criterion 3 alone (practice or maturation effect);
- Disconfirmed if a RQ1 or RQ2 variable met criterion 1 (no intervention or follow-up effects).
Relative to Table 8, the researcher’s *a priori* hypothesis for the within-condition comparisons (per total sample) would be:

- Fully confirmed if a RQ1 or RQ2 variable met both criteria;
- Partially confirmed if a RQ1 or RQ2 variable met either criterion;
- Disconfirmed if a RQ1 or RQ2 variable did not meet any criteria (no intervention or follow-up effects).

Relative to Table 9, the researcher’s *a priori* hypothesis for the between-condition comparisons would be:

- Fully confirmed if a RQ1 or RQ2 variable met all four criteria;
- Partially confirmed if a RQ1 or RQ2 variable met criteria 1, 2 and 3/ criteria 1, 2 and 4/ criteria 1 and 2;
- Disconfirmed if a RQ1 or RQ2 variable met criteria 2, 3 and 4/ criteria 2 and 3/ criteria 2 and 4/ criterion 2/ criterion 3/ criterion 4 (groups significantly different at Baseline);
- Disconfirmed if a RQ1 or RQ2 variable met criteria 1, 4 and 3/ criteria 1 and 3/ criteria 1 and 4/ criteria 3 and 4/ criterion 1 (no intervention effects).

4.1.2. **RQ1: Results overview**

Where appropriate, the following section was split so that each RQ1 variable had a sub-section dedicated to descriptive statistics, non-parametric inferential statistics, and a summary.
4.1.2.1. **Attention Checklist: Descriptive statistics**

Attention Checklist (Das, 2002; see Appendix 1) variable data collected across all four time-points from the experimental group, the WCG, and the total sample are presented in Table 10. Data collected from the experimental group and the WCG are visually represented in Figure 6.
Table 10. Attention Checklist descriptive statistics

<table>
<thead>
<tr>
<th>Condition</th>
<th>Time-point</th>
<th>Intervention stage</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Range</th>
<th>Percentage change within means: Within-condition comparison to pre-intervention (change within means)</th>
<th>Percentage difference between means: Between-condition comparison to equivalent time-point in other condition (difference between means)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental ((n = 16))</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>38.13</td>
<td>9.72</td>
<td>2.43</td>
<td>27 ((21-48))</td>
<td>4.47% ((1.63))</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-1</td>
<td>Post-intervention</td>
<td>41.69</td>
<td>6.3</td>
<td>1.58</td>
<td>17 ((31-48))</td>
<td>10.05% ((3.56))</td>
<td>12.04% ((4.48))</td>
</tr>
<tr>
<td></td>
<td>Time-2</td>
<td>Follow-up 1</td>
<td>39.81</td>
<td>7.58</td>
<td>1.9</td>
<td>26 ((22-48))</td>
<td>4.41% ((1.68))</td>
<td>12.36% ((4.38))</td>
</tr>
<tr>
<td></td>
<td>Time-3</td>
<td>Follow-up 2</td>
<td>42.94</td>
<td>6.33</td>
<td>1.58</td>
<td>19 ((29-48))</td>
<td>12.61% ((4.81))</td>
<td>11.53% ((4.44))</td>
</tr>
<tr>
<td>WCG ((n = 14))</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>36.5</td>
<td>9.04</td>
<td>2.42</td>
<td>21 ((27-48))</td>
<td>-1.91% ((-0.71))</td>
<td>-4.27% ((-1.63))</td>
</tr>
<tr>
<td></td>
<td>Time-1</td>
<td>Pre-intervention</td>
<td>37.21</td>
<td>7.01</td>
<td>1.87</td>
<td>21 ((27-48))</td>
<td>-10.75% ((-4.48))</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-2 intervention</td>
<td>Post-intervention</td>
<td>Pre-intervention</td>
<td>Post-intervention</td>
<td>Follow-up 1</td>
<td></td>
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</tr>
<tr>
<td>Overall sample</td>
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<td></td>
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<tr>
<td>$n = 30$</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>35.43</td>
<td>6.87</td>
<td>1.84</td>
<td>21</td>
<td>-4.78%</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>(-1.78)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>-11%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(-4.38)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-3</td>
<td>38.5</td>
<td>6.43</td>
<td>1.72</td>
<td>19</td>
<td>3.46%</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>(1.29)</td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>-10.34%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(-4.44)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>38.77</td>
<td>7.2</td>
<td>1.31</td>
<td>22</td>
<td>2.84%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(1.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>39.2</td>
<td>6.98</td>
<td>1.27</td>
<td>26</td>
<td>4.77%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(1.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.1.2.2. **Attention Checklist: Non-parametric inferential statistics**

The non-parametric inferential statistics section will be split into three sections: within-condition comparisons (per condition); within-condition comparisons (per total sample); and, between-condition comparisons, whereby each section will include two sub-sections: reporting and interpretation; and, analysis of *a priori* hypotheses.

4.1.2.2.1. **Within-condition comparisons: Per condition – Reporting and interpretation**

As shown in Table 11, in the experimental group, Attention Checklist scores increased significantly from pre-intervention (median = 42.5) to post-intervention (median = 45), $T = 13.5$, $p = .012$. However, whilst this intervention effect was not maintained at follow-up 1 (median = 41.5), $T = 28$, $p = .207$, it was re-maintained at follow-up 2 (median = 46), $T = 6.5$, $p = .001$, with an estimated effect size$^{12}$ of $r = -.53$.  

![Figure 6. Graph to show changes in mean Attention Checklist scores per condition and time-point](image)

---

$^{12}$ Effect size estimation
In the WCG, Attention Checklist scores did not increase significantly from pre pre-intervention (median = 38.5) to pre-intervention (36.5), $T = 21, p = .157$. Furthermore, Attention Checklist scores decreased significantly from pre-intervention (median = 36.5) to post-intervention (median = 33.5), $T = 16.5, p = .039$. Nonetheless, this inverse intervention effect was not maintained at follow-up 1 (median = 38), $T = 28, p = .206$. 
### 4.1.2.2.2. Within-condition comparisons: Per condition – Analysis of *a priori* hypotheses

#### Table 11. Within-condition comparisons (per condition) for Attention Checklist: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Non-significant difference: Pre pre- vs. pre-intervention (<em>p &gt; .05</em>)</th>
<th>Significant increase: Pre- vs. post-intervention (<em>p ≤ .05</em>)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 (<em>p ≤ .05</em>)</th>
<th>Maintained at 14-week follow-up: Pre-intervention vs. follow-up 2 (<em>p ≤ .05</em>)</th>
<th>Evidence of practice effects within the WCG</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention Checklist</td>
<td>Experimental group</td>
<td>N/A</td>
<td><em>p = .012</em></td>
<td><em>p = .207</em></td>
<td><em>p = .001</em></td>
<td>No</td>
<td>Partially</td>
</tr>
<tr>
<td>WCG</td>
<td></td>
<td><em>p = .157</em></td>
<td><em>p = .039 (inverse)</em></td>
<td><em>p = .206</em></td>
<td>N/A</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: **In-line with *a priori* hypothesis.** Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.2.2.3. **Within-condition comparisons: Per total sample** –

**Reporting and interpretation**

As shown in Table 12, in the total sample, Attention Checklist scores did not differ significantly from pre-intervention (median = 37) to post-intervention (median = 37), \( T = 140, p = .277 \), nor from pre-intervention (median = 37) to follow-up 1 (median = 39.5), \( T = 105, p = .105 \).
4.1.2.2.4. **Within-condition comparisons: Per total sample – Analysis of *a priori* hypotheses**

**Table 12. Within-condition comparisons (per total sample) for Attention Checklist: Analysis of *a priori* hypotheses**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significant increase: Pre- vs. post-intervention ((p \leq .05))</th>
<th>Maintained at 6-to 8-week follow-up: Pre-intervention vs. follow-up 1 ((p \leq .05))</th>
<th>Evidence of practice effect contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention Checklist</td>
<td>(p = .277)</td>
<td>(p = .105)</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.2.2.5. **Between-condition comparisons - Reporting and interpretation**

As shown in Table 13, pupils in the experimental group (median = 42.5) did not differ significantly from pupils in the WCG (median = 38.5) in terms of Attention Checklist scores at Baseline, $U = 91.5, p = .202$. However, at Time-1, pupils in the experimental group (median = 45) had significantly higher Attention Checklist scores than pupils in the WCG (median = 36.5), $U = 68, p = .033$. This between-condition difference remained at Time-2 and Time-3. At Time-2, pupils in the experimental group (median = 41.5) had significantly higher Attention Checklist scores than pupils in the WCG (median = 33.5), $U = 69.5, p = .039$. At Time-3, pupils in the experimental group (median = 46) had significantly higher Attention Checklist Scores than pupils in the WCG (median = 38), $U = 66, p = .026$. 
### Between-condition comparisons – Analysis of *a priori* hypotheses

#### Table 13. Between-condition comparisons for Attention Checklist: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-significant difference at Baseline ($p &gt; .05$)</th>
<th>Significant difference at Time-1 ($p \leq .05$): Experimental group &gt; WCG</th>
<th>Non-significant difference at Time-2 ($p &gt; .05$)</th>
<th>Non-significant difference at Time-3 ($p &gt; .05$)</th>
<th>Evidence of practice effect contamination</th>
<th>A <em>priori</em> hypothesis confirmed</th>
</tr>
</thead>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis.
4.1.2.3. **Attention Checklist: Summary of findings**

In conclusion, there was a significant pre- vs. post-intervention effect within the experimental group, yet a significant inverse pre- vs. post-intervention effect within the WCG, whereby the intervention effect within the experimental group was not maintained at the 8-week follow-up, but was re-maintained at the 14-week follow-up with a large estimated effect size, whilst the inverse intervention effect within the WCG was not maintained at the 6-week follow-up. Hence, there was a partial condition × time-point interaction. Furthermore, there was neither an overall pre- vs. post-intervention effect, nor a pre-intervention vs. follow-up effect, within the total sample.

4.1.2.4. **NEPSY-II Inhibition subtest - Naming Total Errors**

**Percentile Rank: Descriptive statistics**

Naming Total Errors Percentile Rank variable data collected across all four time-points from the experimental group, the WCG, and the total sample are presented in Table 14. Data collected from the experimental group and the WCG are visually represented in Figure 7.
Table 14. Naming Total Errors Percentile Rank descriptive statistics

<table>
<thead>
<tr>
<th>Condition (n)</th>
<th>Time-point</th>
<th>Intervention stage</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Range</th>
<th>Percentage change within means: Within-condition comparison to pre-intervention (change within means)</th>
<th>Percentage difference between means: Between-condition comparison to equivalent time-point in other condition (difference between means)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental (n = 16)</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>3.69</td>
<td>1.99</td>
<td>0.5</td>
<td>6 (1-7)</td>
<td></td>
<td>-9.34% (0.38)</td>
</tr>
<tr>
<td>Time-1</td>
<td>Post-intervention</td>
<td>5.94</td>
<td>1.57</td>
<td>0.39</td>
<td>6 (1-7)</td>
<td>60.98% (2.25)</td>
<td>45.95% (1.87)</td>
<td></td>
</tr>
<tr>
<td>Time-2</td>
<td>Follow-up 1</td>
<td>5.56</td>
<td>1.82</td>
<td>0.45</td>
<td>6 (1-7)</td>
<td>50.68% (1.87)</td>
<td>-1.42% (0.08)</td>
<td></td>
</tr>
<tr>
<td>Time-3</td>
<td>Follow-up 2</td>
<td>6.25</td>
<td>1.18</td>
<td>0.3</td>
<td>4 (3-7)</td>
<td>69.38% (2.56)</td>
<td>41.08% (1.82)</td>
<td></td>
</tr>
<tr>
<td>WCG (n = 14)</td>
<td>Baseline</td>
<td>Pre pre-intervention</td>
<td>4.07</td>
<td>2.09</td>
<td>0.56</td>
<td>6 (1-7)</td>
<td>0% (0)</td>
<td>10.3% (0.38)</td>
</tr>
<tr>
<td>Time-1</td>
<td>Pre-intervention</td>
<td>4.07</td>
<td>2.37</td>
<td>0.63</td>
<td>6 (1-7)</td>
<td>-31.48% (1.87)</td>
<td>-31.48% (1.87)</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Post-intervention</td>
<td>Pre-intervention</td>
<td>Post-intervention</td>
<td>Follow-up 1</td>
<td>Overall sample (n = 30)</td>
<td></td>
<td></td>
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<td>-------</td>
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<tr>
<td>Time-2</td>
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<tr>
<td></td>
<td></td>
<td>5.64</td>
<td>1.98</td>
<td>0.53</td>
<td>6 (1-7)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>38.57%</td>
<td>(1.57)</td>
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<tr>
<td></td>
<td></td>
<td>1.44%</td>
<td>(0.08)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Time-3</td>
<td>Follow-up 1</td>
<td>4.43</td>
<td>2.38</td>
<td>0.64</td>
<td>6 (1-7)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>8.85%</td>
<td>(0.36)</td>
<td></td>
<td>-29.12%</td>
<td></td>
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<td></td>
<td></td>
<td>(-1.82)</td>
<td></td>
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<tr>
<td>Overall sample (n = 30)</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Pre-intervention</td>
<td>3.87</td>
<td>2.15</td>
<td>0.39</td>
<td>6 (1-7)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>49.87%</td>
<td>(1.93)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-intervention</td>
<td>5.8</td>
<td>1.75</td>
<td>0.32</td>
<td>6 (1-7)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>29.97%</td>
<td>(1.16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow-up 1</td>
<td>5.03</td>
<td>2.14</td>
<td>0.39</td>
<td>6 (1-7)</td>
<td></td>
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</tr>
</tbody>
</table>
4.1.2.5. **NEPSY-II Inhibition subtest - Naming Total Errors**

**Percentile Rank: Non-parametric inferential statistics**

The non-parametric inferential statistics section will be split into three sections: within-condition comparisons (per condition); within-condition comparisons (per total sample); and, between-condition comparisons, whereby each section will include two sub-sections: reporting and interpretation; and, analysis of *a priori* hypotheses.

4.1.2.5.1. **Within-condition comparisons: Per condition – Reporting and interpretation**

As shown in Table 15, in the experimental group, Naming Total Errors Percentile Rank scores increased significantly from pre-intervention (median = 4) to post-intervention (median = 6), $T = 11, p = .003$. Furthermore, this intervention effect was maintained at follow-up 1 (median = 6), $T = 6, p = .002$, with an estimated effect size of $r = -.51$, and at follow-
up 2 (median = 7), $T = 4$, $p < .001$, with an estimated effect size$^{12}$ of $r = -.56$.

In the WCG, Naming Total Errors Percentile Rank scores did not increase significantly from pre intervention (median = 3.5) to pre-intervention (median = 4.5), $T = 39$, $p = .505$. However, Naming Total Errors Percentile Rank scores increased significantly from pre-intervention (median = 4.5) to post-intervention (median = 7), $T = 13$, $p = .022$. Nonetheless, this intervention effect was not maintained at follow-up 1 (median = 5.5), $T = 23$, $p = .341$. 

Within-condition comparisons: Per condition – Analysis of *a priori* hypotheses

Table 15. *Within-condition comparisons (per condition)* for Naming Total Errors Percentile Rank: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Non-significant difference: Pre pre- vs. pre-intervention (<em>p</em> &gt; .05)</th>
<th>Significant increase: Pre- vs. post-intervention (<em>p</em> ≤ .05)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 (<em>p</em> ≤ .05)</th>
<th>Maintained at 14-week follow-up: Pre-intervention vs. follow-up 2 (<em>p</em> ≤ .05)</th>
<th>Evidence of practice effects within the WCG</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naming Total Errors Percentile Rank</td>
<td>Experimental group</td>
<td>N/ A</td>
<td><em>p</em> = .003</td>
<td><em>p</em> = .002</td>
<td><em>p</em> &lt; .001</td>
<td>No</td>
<td>Fully</td>
</tr>
<tr>
<td></td>
<td>WCG</td>
<td><em>p</em> = .505</td>
<td><em>p</em> = .022</td>
<td><em>p</em> = .341</td>
<td>N/ A</td>
<td></td>
<td>Partially</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.2.5.3. **Within-condition comparisons: Per total sample** –

**Reporting and interpretation**

As shown in Table 16, in the total sample, Naming Total Errors Percentile Rank scores increased significantly from pre-intervention (median = 4) to post-intervention (median = 6.5), $T = 46.5$, $p < .001$, with an estimated effect size$^{12}$ of $r = -.6$. Furthermore, this intervention effect was maintained at follow-up 1 (median = 6), $T = 61$, $p = .009$. 


4.1.2.5.4. Within-condition comparisons: Total sample – Analysis of *a priori* hypotheses

Table 16. *Within-condition comparisons (per total sample)* for Naming Total Errors Percentile Rank: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significant increase: Pre- vs. post-intervention (<em>p</em> ≤ .05)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 (<em>p</em> ≤ .05)</th>
<th>Evidence of practice effect contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naming Total Errors Percentile Rank</td>
<td><em>p</em> &lt; .001</td>
<td><em>p</em> = .009</td>
<td>No</td>
<td>Fully</td>
</tr>
</tbody>
</table>

Note: *In-line with a priori hypothesis*.  *Not in-line with a priori hypothesis*. Significant results with large estimated effect sizes are in **bold**.
4.1.2.5.5. **Between-condition comparisons – Reporting and interpretation**

As shown in Table 17, pupils in the experimental group (median = 4) did not differ significantly from pupils in the WCG (median = 3.5) in terms of Naming Total Errors Percentile Rank scores at Baseline, $U = 98.5, p = .278$. However, at Time-1, pupils in the experimental group (median = 6) had significantly higher Naming Total Errors Percentile Rank scores than pupils in the WCG (median = 4.5), $U = 57, p = .009$. At Time-2, the between-condition difference observed at Time-1 disappeared, whereby pupils in the experimental group (median = 6) did not differ significantly from pupils in the WCG (median = 7) in terms of Naming Total Errors Percentile Rank scores, $U = 91.5, p = .207$. Nonetheless, at Time-3, the between-condition difference observed at Time-1 reappeared, whereby pupils in the experimental condition (median = 7) had significantly higher Naming Total Errors Percentile Rank scores than pupils in the WCG (median = 5.5), $U = 57, p = .008$. 

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### 4.1.2.5.6. Between-condition comparisons – Analysis of *a priori* hypotheses

Table 17. Between-condition comparisons for Naming Total Errors Percentile Rank: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-significant difference at Baseline ($p &gt; .05$)</th>
<th>Significant difference at Time-1 ($p \leq .05$): Experimental group &gt; WCG</th>
<th>Non-significant difference at Time-2 ($p &gt; .05$)</th>
<th>Non-significant difference at Time-3 ($p &gt; .05$)</th>
<th>Evidence of practice effect contamination</th>
<th>A <em>priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naming Total Errors Percentile Rank</td>
<td>$p = .278$</td>
<td>$p = .009$</td>
<td>$p = .207$</td>
<td>$p = .008$</td>
<td>No</td>
<td>Partially</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis.
4.1.2.6. **NEPSY-II Inhibition subtest - Naming Total Errors**

**Percentile Rank: Summary of findings**

In conclusion, there was a significant pre- vs. post-intervention effect within the experimental group and the WCG, whereby the intervention effect within the experimental group was maintained at the 8-week and 14-week follow-ups with large estimated effect sizes, whilst the intervention effect within the WCG was not maintained at the 6-week follow-up. Hence, there was a partial condition × time-point interaction. Furthermore, there was an overall pre- vs. post-intervention effect within the whole sample with a large estimated effect size, whereby the overall intervention effect was maintained at the 6- to 8-week follow-up (regardless of the fact that the intervention effect within the WCG was not maintained at the 6-week follow-up).

4.1.2.7. **NEPSY-II Inhibition subtest - Naming Total Completion**

**Time Scaled-Score: Descriptive statistics**

Naming Total Completion Time Scaled-Score variable data collected across all four time-points from the experimental group, the WCG, and the total sample are presented in Table 18. Data collected from the experimental group and the WCG are visually represented in Figure 8.
### Table 18. Naming Total Completion Time Scaled-Score descriptive statistics

<table>
<thead>
<tr>
<th>Condition (n)</th>
<th>Time-point</th>
<th>Intervention stage</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Range</th>
<th>Percentage change within means: Within-condition comparison to pre-intervention (change within means)</th>
<th>Percentage difference between means: Between-condition comparison to equivalent time-point in other condition (difference between means)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental (n = 16)</strong></td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>9.19</td>
<td>4.02</td>
<td>1.01</td>
<td>13 (5-18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-1</td>
<td>Post-intervention</td>
<td>11.43</td>
<td>3.42</td>
<td>0.86</td>
<td>12 (6-18)</td>
<td>24.37% (2.24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-2</td>
<td>Follow-up 1</td>
<td>12.38</td>
<td>3.22</td>
<td>0.81</td>
<td>11 (8-19)</td>
<td>34.71% (3.19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-3</td>
<td>Follow-up 2</td>
<td>13.44</td>
<td>3.5</td>
<td>0.88</td>
<td>12 (7-19)</td>
<td>46.25% (4.25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WCG (n = 14)</strong></td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>10.21</td>
<td>3.24</td>
<td>0.88</td>
<td>13 (4-17)</td>
<td>-19.22% (2.43)</td>
<td></td>
</tr>
<tr>
<td>Time-1</td>
<td>Pre-intervention</td>
<td>12.64</td>
<td>3.41</td>
<td>0.91</td>
<td>12 (6-18)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Post-intervention</td>
<td>Pre-intervention</td>
<td>Post-intervention</td>
<td>Follow-up 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>-------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-2</td>
<td></td>
<td>13.86</td>
<td>3.3</td>
<td>0.88</td>
<td>13</td>
<td>9.65%</td>
<td>11.95%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(6-19)</td>
<td>(1.22)</td>
<td>(1.48)</td>
<td></td>
</tr>
<tr>
<td>Time-3</td>
<td>Follow-up 1</td>
<td>14.5</td>
<td>2.77</td>
<td>0.74</td>
<td>10</td>
<td>14.72%</td>
<td>7.89%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(9-19)</td>
<td>(1.86)</td>
<td>(1.06)</td>
<td></td>
</tr>
<tr>
<td>Overall sample (n = 30)</td>
<td></td>
<td>10.8</td>
<td>4.08</td>
<td>0.74</td>
<td>13</td>
<td>16.39%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(5-18)</td>
<td>(1.77)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12.57</td>
<td>3.53</td>
<td>0.64</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(6-19)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.37</td>
<td>3.16</td>
<td>0.58</td>
<td>11</td>
<td>23.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(8-19)</td>
<td>(2.57)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.1.2.8. **NEPSY-II Inhibition subtest - Naming Total Completion Time Scaled-Score:**

Time Scaled-Score: Non-parametric inferential statistics

The non-parametric inferential statistics section will be split into three sections: within-condition comparisons (per condition); within-condition comparisons (per total sample); and, between-condition comparisons, whereby each section will include two sub-sections: reporting and interpretation; and, analysis of *a priori* hypotheses.

4.1.2.8.1. **Within-condition comparisons: Per condition – Reporting and interpretation**

As shown in Table 19, in the experimental group, Naming Total Completion Time Scaled-Score scores increased significantly from pre-intervention (median = 9) to post-intervention (median = 12), $T = 12$, $p = .004$. Furthermore, this intervention effect was maintained at follow-up 1 (median = 12), $T = 4$, $p < .001$, with an estimated effect size of $r = -.61$. 

![Graph showing changes in mean Naming Total Completion Time Scaled-Score scores per condition and time-point](image)

**Figure 8.** Graph to show changes in mean Naming Total Completion Time Scaled-Score scores per condition and time-point
and at follow-up 2 (median = 14.5), \( T = 0, p < .001 \), with an estimated effect size\(^{12}\) of \( r = -.64 \).

In the WCG, Naming Total Completion Time Scaled-Score scores increased significantly from pre pre-intervention (median = 9.5) to pre-intervention (median = 13.5), \( T = 0, p < .001 \), thus indicating a practice effect with an estimated effect size\(^{12}\) of \( r = -.59 \). However, Naming Total Completion Time Scaled-Score scores did not increase significantly from pre-intervention (median = 13.5) to post-intervention (median = 14.5), \( T = 12.5, p = .075 \). Nonetheless, Naming Total Completion Time Scaled-Score scores did increase significantly from pre-intervention (median = 13.5) to follow-up 1 (median = 15), \( T = 6, p = .003 \).
### 4.1.2.8.2. Within-condition comparisons: Per condition – Analysis of *a priori* hypotheses

**Table 19. Within-condition comparisons (per condition) for Naming Total Completion Time Scaled-Score: Analysis of *a priori* hypotheses**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Non-significant difference: Pre pre- vs. pre-intervention ( (p &gt; .05) )</th>
<th>Significant increase: Pre- vs. post-intervention ( (p \leq .05) )</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 ( (p \leq .05) )</th>
<th>Maintained at 14-week follow-up: Pre-intervention vs. follow-up 2 ( (p \leq .05) )</th>
<th>Evidence of practice effects within the WCG</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naming Total Completion Time Scaled-Score</td>
<td>Experimental group</td>
<td>N/ A [ \text{ ( p = .004 ) } ]</td>
<td>[ \text{ ( p &lt; .001 ) } ]</td>
<td>[ \text{ ( p &lt; .001 ) } ]</td>
<td>[ \text{Yes} ]</td>
<td>[ \text{No (practice effect within the WCG)} ]</td>
<td></td>
</tr>
<tr>
<td>WCG</td>
<td>[ \text{ ( p &lt; .001 ) } ] [ \text{(practice effect)} ]</td>
<td>[ \text{ ( p = .075 ) } ]</td>
<td>[ \text{ ( p = .003 ) } ]</td>
<td>N/ A [ \text{ ( p &lt; .001 ) } ]</td>
<td>[ \text{Yes} ]</td>
<td>[ \text{No (practice effect within the WCG)} ]</td>
<td></td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
Within-condition comparisons: Per total sample – Reporting and interpretation

As shown in Table 20, in the total sample, Naming Total Completion Time Scaled-Score scores increased significantly from pre-intervention (median = 10.5) to post-intervention (median = 12.5), \( T = 39.5, p < .001 \), with an estimated effect size\(^{12} \) of \( r = -.58 \) (see Rosenthal, 1991, p. 19). Furthermore, this intervention effect was maintained at follow-up 1 (median = 14.5), \( T = 17.5, p < .001 \), with an estimated effect size\(^{12} \) of \( r = -.78 \).
### 4.1.2.8.4. Within-condition comparisons: Per total sample – Analysis of *a priori* hypotheses

Table 20. *Within-condition comparisons (per total sample)* for Naming Total Completion Time Scaled-Score: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significant increase: Pre- vs. post-intervention (<em>p</em> ≤ .05)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 (<em>p</em> ≤ .05)</th>
<th>Evidence of practice effect contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naming Total Completion Time Scaled-Score</td>
<td><strong>p &lt; .001</strong></td>
<td><strong>p &lt; .001</strong></td>
<td>Yes (see Table 19)</td>
<td>No (practice effect contamination)</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.2.8.5. **Between-condition comparisons – Reporting and interpretation**

As shown in Table 21, pupils in the experimental group (median = 9) did not differ significantly from pupils in the WCG (median = 9.5) in terms of Naming Total Completion Time Scaled-Score scores at Baseline, \( U = 86.5, p = .147 \). At Time-1, pupils in the experimental group (median = 12) did not differ significantly from pupils in the WCG (median = 13.5) in terms of Naming Total Completion Time Scaled-Score scores, \( U = 86.5, p = .148 \). At Time-2, pupils in the experimental group (median = 12) did not differ significantly from pupils in the WCG (median = 14.5) in terms of Naming Total Completion Time Scaled-Score scores, \( U = 80.5, p = .096 \). At Time-3, pupils in the experimental group (median = 14.5) did not differ significantly from pupils in the WCG (median = 15) in terms of Naming Total Completion Time Scaled-Score scores, \( U = 95, p = .243 \).
4.1.2.8.6. **Between-condition comparisons – Analysis of *a priori* hypotheses**

Table 21. *Between-condition comparisons for Naming Total Completion Time Scaled-Score: Analysis of *a priori* hypotheses*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-significant difference at Baseline ($p &gt; .05$)</th>
<th>Significant difference at Time-1 ($p \leq .05$): Experimental group &gt; WCG</th>
<th>Non-significant difference at Time-2 ($p &gt; .05$)</th>
<th>Non-significant difference at Time-3 ($p &gt; .05$)</th>
<th>Evidence of practice effect contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naming Total Completion Time Scaled-Score</td>
<td>$p = .147$</td>
<td>$p = .148$</td>
<td>$p = .096$</td>
<td>$p = .243$</td>
<td>Yes (see Table 19)</td>
<td>No (practice effect contamination)</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis.
4.1.2.9. **NEPSY-II Inhibition subtest - Naming Total Completion**

**Time Scaled-Score: Summary of findings**

In conclusion, there was a significant pre- vs. post-intervention effect within the experimental group but not within the WCG, whereby the intervention effect within the experimental group was maintained at the 8-week and 14-week follow-ups with large estimated effect sizes. Nonetheless, there was a significant pre-intervention vs. follow-up 1 effect within the WCG. Hence, there was no condition × time-point interaction. Furthermore, there was a significant overall pre vs. post-intervention effect within the total sample with a large estimated effect size, whereby the overall intervention effect was maintained at the 6- to 8-week follow-up, also with a large estimated effect size. However, as there was a significant pre pre- vs. pre-intervention practice effect within the WCG with a large estimated effect size, the validity of the intervention effects noted within the experimental group and the WCG, and the total sample, is thus brought into question.

4.1.2.10. **NEPSY-II Inhibition subtest - Inhibition Total Errors**

**Percentile Rank: Descriptive statistics**

Inhibition Total Errors Percentile Rank variable data collected across all four time-points from the experimental group, the WCG, and the total sample are presented in Table 22. Data collected from the experimental group and the WCG are visually represented in Figure 9.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Time-point</th>
<th>Intervention stage</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Range</th>
<th>Percentage change within means: Within-condition comparison to pre-intervention (change within means)</th>
<th>Percentage difference between means: Between-condition comparison to equivalent time-point in other condition (difference between means)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>3.19</td>
<td>2.04</td>
<td>0.51</td>
<td>5</td>
<td>-12.36% (-0.45)</td>
<td></td>
</tr>
<tr>
<td>WCG (n = 16)</td>
<td>Time-1</td>
<td>Post-intervention</td>
<td>4.94</td>
<td>1.77</td>
<td>0.44</td>
<td>6</td>
<td>54.86% (1.75)</td>
<td>35.71% (1.3)</td>
</tr>
<tr>
<td>WCG (n = 14)</td>
<td>Time-2</td>
<td>Follow-up 1</td>
<td>5.44</td>
<td>1.31</td>
<td>0.33</td>
<td>5</td>
<td>70.53% (2.25)</td>
<td>-2.33% (-0.13)</td>
</tr>
<tr>
<td>WCG (n = 14)</td>
<td>Time-3</td>
<td>Follow-up 2</td>
<td>5.25</td>
<td>1</td>
<td>0.25</td>
<td>4</td>
<td>64.58% (2.06)</td>
<td>8.25% (0.4)</td>
</tr>
<tr>
<td>WCG (n = 14)</td>
<td>Baseline</td>
<td>Pre pre-intervention</td>
<td>3.64</td>
<td>2.1</td>
<td>0.56</td>
<td>5</td>
<td>0% (0)</td>
<td>14.11% (0.45)</td>
</tr>
<tr>
<td>WCG (n = 14)</td>
<td>Time-1</td>
<td>Pre-intervention</td>
<td>3.64</td>
<td>2.44</td>
<td>0.65</td>
<td>6</td>
<td>-26.32% (-1.3)</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Post-intervention</td>
<td>Pre-intervention</td>
<td>Post-intervention</td>
<td>Follow-up 1</td>
<td>6 (1-7)</td>
<td>53.02% (1.93)</td>
<td>2.39% (0.13)</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-------------------</td>
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<td>-------------</td>
<td>---------</td>
<td>----------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Time-2</td>
<td></td>
<td>5.57</td>
<td>1.99</td>
<td>0.53</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-3</td>
<td>Follow-up 1</td>
<td>4.85</td>
<td>2.07</td>
<td>0.55</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33.24% (1.21)</td>
<td>-7.62% (-0.4)</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre-intervention</td>
<td>3.4</td>
<td>2.21</td>
<td>0.4</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-intervention</td>
<td>5.23</td>
<td>1.87</td>
<td>0.34</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow-up 1</td>
<td>5.17</td>
<td>1.7</td>
<td>0.31</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.1.2.11. **NEPSY-II Inhibition subtest - Inhibition Total Errors Percentile Rank: Non-parametric inferential statistics**

The non-parametric inferential statistics section will be split into three sections: within-condition comparisons (per condition); within-condition comparisons (per total sample); and, between-condition comparisons, whereby each section will include two sub-sections: reporting and interpretation; and, analysis of *a priori* hypotheses.

### 4.1.2.11.1. **Within-condition comparisons: Per condition – Reporting and interpretation**

As shown in Table 23, in the experimental group, Inhibition Total Errors Percentile Rank scores increased significantly from pre-intervention (median = 2.5) to post-intervention (median = 5), \( T = 22, p = .015 \). Furthermore, this intervention effect was maintained at follow-up 1 (median = 6), \( T = 8.5, p = .003 \), and at follow-up 2 (median = 5), \( T = 7.5, p = .001 \), with an estimated effect size\(^{12}\) of \( r = -.52 \).
In the WCG, Inhibition Total Errors Percentile Rank scores did not increase significantly from pre pre-intervention (median = 4) to pre-intervention (median = 2.5), $T = 36$, $p = .426$. However, Inhibition Total Errors Percentile Rank scores increased significantly from pre-intervention (median = 2.5) to post-intervention (median = 6.5), $T = 5$, $p = .01$. Nonetheless, this intervention effect was not maintained at follow-up 1 (median = 6), $T = 25.5$, $p = .089$. 
4.1.2.11.2. **Within-condition comparisons: Per condition – Analysis of *a priori* hypotheses**

Table 23. **Within-condition comparisons (per condition) for Inhibition Total Errors Percentile Rank: Analysis of *a priori* hypotheses**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Non-significant difference: Pre pre- vs. pre-intervention (<em>p</em> &gt; .05)</th>
<th>Significant increase: Pre vs. post-intervention (<em>p</em> ≤ .05)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 (<em>p</em> ≤ .05)</th>
<th>Maintained at 14-week follow-up: Pre-intervention vs. follow-up 2 (<em>p</em> ≤ .05)</th>
<th>Evidence of practice effects within the WCG</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhibition Total Errors Percentile Rank</td>
<td>Experimental group</td>
<td>N/ A</td>
<td><em>p</em> = .015</td>
<td><em>p</em> = .003</td>
<td><em>p</em> = .001</td>
<td>No</td>
<td>Fully</td>
</tr>
<tr>
<td></td>
<td>WCG</td>
<td><em>p</em> = .426</td>
<td><em>p</em> = .01</td>
<td><em>p</em> = .089</td>
<td>N/ A</td>
<td>Partially</td>
<td></td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.2.11.3. **Within-condition comparisons: Per total sample –**

**Reporting and interpretation**

As shown in Table 24, in the total sample, Inhibition Total Errors Percentile Rank scores increased significantly from pre-intervention (median = 2.5) to post-intervention (median = 6), $T = 47.5$, $p = .001$, with an estimated effect size of $r = -0.57$ (see Rosenthal, 1991, p. 19). Furthermore, this intervention effect was maintained at follow-up 1 (median = 6), $T = 61.5$, $p = .001$, with an estimated effect size of $r = -0.53$. 
Table 24: Within-condition comparisons (per total sample) for Inhibition Total Errors Percentile Rank: Analysis of a priori hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significant increase: Pre- vs. post-intervention ($p \leq .05$)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 ($p \leq .05$)</th>
<th>Evidence of practice effect contamination</th>
<th>A priori hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhibition Total Errors Percentile Rank</td>
<td>$p = .001$</td>
<td>$p = .001$</td>
<td>No</td>
<td>Fully</td>
</tr>
</tbody>
</table>

Note: In-line with a priori hypothesis. Not in-line with a priori hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.2.11.5. **Between-condition comparisons – Reporting and interpretation**

As shown in Table 25, pupils in the experimental group (median = 2.5) did not differ significantly from pupils in the WCG (median = 4) in terms of Inhibition Total Errors Percentile Rank scores at Baseline, $U = 99$, $p = .304$. At Time-1, pupils in the experimental group (median = 5) did not differ significantly from pupils in the WCG (median = 2.5) in terms of Inhibition Total Errors Percentile Rank scores, $U = 79.5$, $p = .089$. At Time-2, pupils in the experimental group (median = 6) did not differ significantly from pupils in the WCG (median = 6.5) in terms of Inhibition Total Errors Percentile Rank scores, $U = 88.5$, $p = .16$. At Time-3, pupils in the experimental group (median = 5) did not differ significantly from pupils in the WCG (median = 6) in terms of Naming Total Completion Time Scaled-Score scores, $U = 104.5$, $p = .373$. 
### Between-condition comparisons – Analysis of *a priori* hypotheses

#### Table 25. *Between-condition comparisons for Inhibition Total Errors Percentile Rank: Analysis of *a priori* hypotheses*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-significant difference at Baseline ($p &gt; .05$)</th>
<th>Significant difference at Time-1 ($p \leq .05$): Experimental group &gt; WCG</th>
<th>Non-significant difference at Time-2 ($p &gt; .05$)</th>
<th>Non-significant difference at Time-3 ($p &gt; .05$)</th>
<th>Evidence of practice effect contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhibition Total Errors Percentile Rank</td>
<td>$p = .304$</td>
<td>$p = .089$</td>
<td>$p = .16$</td>
<td>$p = .373$</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: *In-line with* *a priori* hypothesis. Not in-line with *a priori* hypothesis.
4.1.2.12. **NEPSY-II Inhibition subtest - Inhibition Total Errors**

**Percentile Rank: Summary of findings**

In conclusion, there was a significant pre- vs. post-intervention effect within the experimental group and the WCG, whereby the intervention effect within the experimental group was maintained at the 8-week and 14-week follow-ups with a large estimated effect size at the 14-week follow-up, whilst the intervention effect within the WCG was not maintained at the 6-week follow-up. Hence, there was no condition × time-point interaction. Nonetheless, there was an overall pre- vs. post-intervention effect within the whole sample with a large estimated effect size, whereby the overall intervention effect was maintained at the 6- to 8-week follow-up, also with a large estimated effect size.

4.1.2.13. **NEPSY-II Inhibition subtest - Inhibition Total Completion**

**Time Scaled-Score: Descriptive statistics**

Inhibition Total Completion Time Scaled-Score variable data collected across all four time-points from the experimental group, the WCG, and the total sample are presented in Table 26. Data collected from the experimental group and the WCG are visually represented in Figure 10.
Table 26. Inhibition Total Completion Time Scaled-Score descriptive statistics

<table>
<thead>
<tr>
<th>Condition</th>
<th>Time-point</th>
<th>Intervention stage</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Range</th>
<th>Percentage change within means: Within-condition comparison to pre-intervention (change within means)</th>
<th>Percentage difference between means: Between-condition comparison to equivalent time-point in other condition (difference between means)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>9.5</td>
<td>2.66</td>
<td>0.66</td>
<td>11 (6-17)</td>
<td>-9.52%</td>
<td>-9.52%</td>
</tr>
<tr>
<td>(n = 16)</td>
<td>Time-1</td>
<td>Post-intervention</td>
<td>11.5</td>
<td>2.63</td>
<td>0.66</td>
<td>9 (8-17)</td>
<td>21.05%</td>
<td>-8%</td>
</tr>
<tr>
<td></td>
<td>Time-2</td>
<td>Follow-up 1</td>
<td>11.88</td>
<td>2.47</td>
<td>0.62</td>
<td>8 (8-16)</td>
<td>25.05%</td>
<td>-10.61%</td>
</tr>
<tr>
<td></td>
<td>Time-3</td>
<td>Follow-up 2</td>
<td>13.31</td>
<td>2.82</td>
<td>0.71</td>
<td>11 (8-19)</td>
<td>40.11%</td>
<td>-4.45%</td>
</tr>
<tr>
<td>WCG</td>
<td>Baseline</td>
<td>Pre pre-intervention</td>
<td>10.5</td>
<td>3.08</td>
<td>0.82</td>
<td>10 (6-16)</td>
<td>-16%</td>
<td>10.53%</td>
</tr>
<tr>
<td>(n = 14)</td>
<td>Time-1</td>
<td>Pre-intervention</td>
<td>12.5</td>
<td>4.27</td>
<td>1.14</td>
<td>17 (2-19)</td>
<td>8.7%</td>
<td>8.7%</td>
</tr>
<tr>
<td></td>
<td>Time-2</td>
<td>Post-intervention</td>
<td>13.29</td>
<td>3.51</td>
<td>0.94</td>
<td>11</td>
<td>6.32%</td>
<td>11.87%</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------</td>
<td>------------------</td>
<td>-------</td>
<td>------</td>
<td>------</td>
<td>----</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td>Time-3</td>
<td>Follow-up 1</td>
<td>13.93</td>
<td>3.65</td>
<td>0.97</td>
<td>13</td>
<td>11.44%</td>
<td>4.66%</td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>Pre-intervention</td>
<td>10.9</td>
<td>3.76</td>
<td>0.69</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>Post-intervention</td>
<td>12.3</td>
<td>3.16</td>
<td>0.58</td>
<td>11</td>
<td>12.84%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overall</td>
<td>Follow-up 1</td>
<td>12.83</td>
<td>3.2</td>
<td>0.58</td>
<td>13</td>
<td>17.71%</td>
<td></td>
</tr>
</tbody>
</table>

Overall sample (n = 30)
4.1.2.14. **NEPSY-II Inhibition subtest - Inhibition Total Completion Time Scaled-Score: Non-parametric inferential statistics**

The non-parametric inferential statistics section will be split into three sections: within-condition comparisons (per condition); within-condition comparisons (per total sample); and, between-condition comparisons, whereby each section will include two sub-sections: reporting and interpretation; and, analysis of *a priori* hypotheses.

4.1.2.14.1. **Within-condition comparisons: Per condition – Reporting and interpretation**

As shown in Table 27, in the experimental group, Inhibition Total Completion Time Scaled-Score scores increased significantly from pre-intervention (median = 8.5) to post-intervention (median = 11.5), $T = 15.5$, $p = .008$. Furthermore, this intervention effect was maintained at follow-up 1 (median = 11.5), $T = 12$, $p = .002$, with an estimated effect size$^{12}$ of $r =$
-.5, and at follow-up 2 (median = 13.5), \( T = 0, p < .001 \), with an estimated effect size\(^{12}\) of \( r = -.62 \).

In the WCG, Inhibition Total Completion Time Scaled-Score scores increased significantly from pre pre-intervention (median = 10.5) to pre-intervention (median = 13), \( T = 13, p = .008 \), thus indicating a practice effect. However, Inhibition Total Completion Time Scaled-Score scores did not increase significantly from pre-intervention (median = 13) to post-intervention (median = 14), \( T = 30.5, p = .157 \). Nonetheless, Inhibition Total Completion Time Scaled-Score scores did increase significantly from pre-intervention (median = 13) to follow-up 1 (median = 14.5), \( T = 19.5, p = .037 \).
### Within-condition comparisons: Per condition – Analysis of *a priori* hypotheses

#### Table 27. Within-condition comparisons (per condition) for Inhibition Total Completion Time Scaled-Score: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Non-significant difference: Pre pre- vs. pre-intervention (<em>p &gt; .05)</em></th>
<th>Significant increase: Pre vs. post-intervention (<em>p ≤ .05)</em></th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 (<em>p ≤ .05)</em></th>
<th>Maintained at 14-week follow-up: Pre-intervention vs. follow-up 2 (<em>p ≤ .05)</em></th>
<th>Evidence of practice effects within the WCG</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhibition Total Completion Time Scaled-Score</td>
<td>Experimental group</td>
<td>N/ A</td>
<td><em>p = .008</em></td>
<td><em>p = .002</em></td>
<td><em>p &lt; .001</em></td>
<td>Yes</td>
<td>No (practice effect within the WCG)</td>
</tr>
<tr>
<td></td>
<td>WCG</td>
<td><em>p = .008</em> (practice effect)</td>
<td><em>p = .157</em></td>
<td><em>p = .037</em></td>
<td>N/ A</td>
<td>No (practice effect within the WCG)</td>
<td></td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.2.14.3. **Within-condition comparisons: Per total sample** –

**Reporting and interpretation**

As shown in Table 28, in the total sample, Inhibition Total Completion Time Scaled-Score scores increased significantly from pre-intervention (median = 11) to post-intervention (median = 12), $T = 91.5$, $p = .009$. Furthermore, this intervention effect was maintained at follow-up 1 (median = 13), $T = 61.5$, $p < .001$, with an estimated effect size$^{12}$ of $r = -$ .59.
### 4.1.2.14.4. Within-condition comparisons: Per total sample – Analysis of *a priori* hypotheses

**Table 28. Within-condition comparisons (per total sample) for Inhibition Total Completion Time Scaled-Score: Analysis of *a priori* hypotheses**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significant increase: Pre- vs. post-intervention (p ≤ .05)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 (p ≤ .05)</th>
<th>Evidence of practice effect contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhibition Total Completion Time Scaled-Score</td>
<td>p = .009</td>
<td>p &lt; .001</td>
<td>Yes (see Table 27)</td>
<td>No (practice effect contamination)</td>
</tr>
</tbody>
</table>

Note: **In-line with *a priori* hypothesis.** Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold.**
4.1.2.14.5. **Between-condition comparisons – Reporting and interpretation**

As shown in Table 29, pupils in the experimental group (median = 8.5) did not differ significantly from pupils in the WCG (median = 10.5) in terms of Inhibition Total Completion Time Scaled-Score scores at Baseline, $U = 90.5, p = .189$. At Time-1, pupils in the experimental group (median = 11.5) did not differ significantly from pupils in the WCG (median = 13) in terms of Inhibition Total Completion Time Scaled-Score scores, $U = 82, p = .109$. At Time-2, pupils in the experimental group (median = 11.5) did not differ significantly from pupils in the WCG (median = 14) in terms of Inhibition Total Completion Time Scaled-Score scores, $U = 80.5, p = .098$. At Time-3, pupils in the experimental group (median = 13.5) did not differ significantly from pupils in the WCG (median = 14.5) in terms of Inhibition Total Completion Time Scaled-Score scores, $U = 95.5, p = .252$. 


### 4.1.2.14.6. *Between-condition comparisons – Analysis of a priori hypotheses*

**Table 29. Between-condition comparisons for Inhibition Total Completion Time Scaled-Score: Analysis of a priori hypotheses**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-significant difference at Baseline ($p &gt; .05$)</th>
<th>Significant difference at Time-1 ($p \leq .05$): Experimental group &gt; WCG</th>
<th>Non-significant difference at Time-2 ($p &gt; .05$)</th>
<th>Non-significant difference at Time-3 ($p &gt; .05$)</th>
<th>Evidence of practice effect contamination</th>
<th>A priori hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhibition Total Completion Time Scaled-Score</td>
<td>$p = .189$</td>
<td>$p = .109$</td>
<td>$p = .098$</td>
<td>$p = .252$</td>
<td>Yes (see Table 27)</td>
<td>No (practice effect contamination)</td>
</tr>
</tbody>
</table>

Note: *In-line with a priori hypothesis.* Not in-line with a priori hypothesis.
4.1.2.15. **NEPSY-II Inhibition subtest - Inhibition Total Completion**

**Time Scaled-Score: Summary of findings**

In conclusion, there was a significant pre- vs. post-intervention effect within the experimental group but not within the WCG, whereby the intervention effect within the experimental group was maintained at the 8-week and 14-week follow-ups with large estimated effect sizes. Nonetheless, there was a significant pre-intervention vs. follow-up 1 effect within the WCG. Hence, there was no condition × time-point interaction. Furthermore, there was a significant overall pre vs. post-intervention effect within the total sample, whereby the overall intervention effect was maintained at the 6- to 8-week follow-up with a large estimated effect size. However, as there was a significant pre pre- vs. pre-intervention practice effect within the WCG, the validity of the intervention effects noted within the experimental group and the WCG, and the total sample, is thus brought into question.

4.1.2.16. **Impact of practice effects within Naming and Inhibition**

**Total Completion Time Scaled-Score variables**

Relative to Section 3.5.1.1.2.4. and Figure 5, as practice effects were noted within both of the total completion time variables (see Sections 4.1.2.8.1., 4.1.2.8.2., 4.1.2.14.1., and 4.1.2.14.2.), it was decided that both of the combined scaled-score variables and the contrast scaled-score variable would be omitted from the results section as they were contaminated with the practice effects from the two total completion time variables.

4.1.3. **RQ1: Executive summary of findings**

In conclusion, the main findings in answer to RQ1 were as follows:

- The Attention Checklist variable (Das, 2002; see Appendix 1) partially confirmed the researcher’s *a priori* hypothesis for the within condition comparisons (per condition) in the experimental
group, as variable scores increased significantly from pre- to post-intervention and, whilst the intervention effect was not maintained at the 8-week follow-up, it was re-maintained at the 14-week follow-up with a large estimated effect size.

This indicates that the Paws .b mindfulness programme had a significantly positive immediate impact upon experimental pupils’ suppressing and sustaining attention skills, to the extent that the experimental teacher rated their pupils as having displayed better suppressing and sustaining attention skills within the classroom at post-intervention in comparison to pre-intervention. Furthermore, whilst the experimental teacher did not rate their pupils as having displayed better suppressing and sustaining attention skills at the 8-week follow-up in comparison to pre-intervention, they did rate their pupils as having displayed better suppressing and sustaining attention skills at the 14-week follow-up in comparison to pre-intervention. The presence of a large estimated effect size at the 14-week follow-up indicates that the full impact of the Paws .b mindfulness programme on pupils’ suppressing and sustaining attention skills was not able to be observed by the experimental teacher until 14-weeks after it had finished.

- The Naming Total Errors Percentile Rank variable (NEPSY-II Inhibition subtest; Korkman, Kirk & Kemp, 2007) fully confirmed the researcher’s a priori hypothesis for the within-condition comparisons (per condition) in the experimental group and partially confirmed the researcher’s a priori hypothesis for the within-condition comparisons (per condition) in the WCG. Variable scores in the experimental group increased significantly from pre- to post-intervention and the intervention effect was maintained at the 8- and 14-week follow-ups with large estimated effect sizes. However, whilst variable scores in the WCG
increased significantly from pre- to post-intervention, the intervention effect was not maintained at the 6-week follow-up.

This indicates that the Paws .b mindfulness programme had a significantly positive immediate impact upon experimental and waitlist control pupils’ sustaining attention skills, to the extent that they displayed better sustaining attention skills when the researcher administered the two naming tasks on the NEPSY-II Inhibition subtest at post-intervention in comparison to pre-intervention. Furthermore, whilst the waitlist control pupils did not display better sustaining attention skills at the 6-week follow-up in comparison to pre-intervention, experimental pupils did display better sustaining attention skills at the 8- and 14-week follow-ups in comparison to pre-intervention. The presence of large estimated effect sizes at the 8- and 14-week follow-ups within the experimental group indicates that the full impact of the Paws .b mindfulness programme on experimental pupils’ sustaining attention skills was not able to be assessed until 8-weeks after it had finished.

- The Inhibition Total Errors Percentile Rank variable (NEPSY-II Inhibition subtest; Korkman, Kirk & Kemp, 2007) fully confirmed the researcher’s a priori hypothesis for the within-condition comparisons (per condition) in the experimental group and partially confirmed the researcher’s a priori hypothesis for the within-condition comparisons (per condition) in the WCG. Variable scores in the experimental group increased significantly from pre- to post-intervention and the intervention effect was maintained at the 8- and 14-week follow-ups with a large estimated effect size at the 14-week follow-up. However, whilst variable scores in the WCG increased significantly from pre- to post-intervention, the intervention effect was not maintained at the 6-week follow-up.
This indicates that the Paws .b mindfulness programme had a significantly positive immediate impact upon experimental and waitlist control pupils’ suppressing attention skills, to the extent that they displayed better suppressing attention skills when the researcher administered the two inhibition tasks on the NEPSY-II Inhibition subtest at post-intervention in comparison to pre-intervention. Furthermore, whilst the waitlist control pupils did not display better suppressing attention skills at the 6-week follow-up in comparison to pre-intervention, experimental pupils did display better suppressing attention skills at the 8- and 14-week follow-ups in comparison to pre-intervention. The presence of a large estimated effect size at the 14-week follow-up within the experimental group indicates that the full impact of the Paws .b mindfulness programme on experimental pupils’ suppressing attention skills was not able to be assessed until 14-weeks after it had finished.

- The Naming Total Errors Percentile Rank variable fully confirmed the researcher’s *a priori* hypothesis for the within-condition comparisons (per total sample), as variable scores increased significantly from pre- to post-intervention with a large estimated effect size and the intervention effect was maintained at the 6- to 8-week follow-up.

This indicates that the Paws .b mindfulness programme had a significantly positive immediate impact upon all pupils’ sustaining attention skills, to the extent that they displayed better sustaining attention skills when the researcher administered the two naming tasks on the NEPSY-II Inhibition subtest at post-intervention in comparison to pre-intervention. The presence of a large estimated effect size at post-intervention, yet the lack of a large estimated effect size at the 6- to 8-week follow-up, indicates that the Paws .b mindfulness programme may need to continue
beyond its 6-week intervention window in order to maintain its full impact on all pupils’ sustaining attention skills.

- The Inhibition Total Errors Percentile Rank variable fully confirmed the researcher’s *a priori* hypothesis for the within-condition comparisons (per total sample), as variable scores increased significantly from pre- to post-intervention with a large estimated effect size and the intervention effect was maintained at the 6- to 8-week follow-up, also with a large estimated effect size.

  This indicates that the Paws .b mindfulness programme had a significantly positive immediate impact upon all pupils’ suppressing attention skills, to the extent that they displayed better suppressing attention skills when the researcher administered the two inhibition tasks on the NEPSY-II Inhibition subtest at post-intervention in comparison to pre-intervention. The presence of a large estimated effect size at post-intervention and at the 6- to 8-week follow-up indicates that the full impact of the Paws .b mindfulness programme on all pupils’ suppressing attention skills was able to be assessed as soon as it had finished.

- The Attention Checklist variable partially confirmed the researcher’s *a priori* hypothesis for the between-condition comparisons as there was a partial condition × time-point interaction. Variable scores did not differ significantly between the experimental group and the WCG at Baseline, yet variable scores were significantly higher in the experimental group than the WCG at Time-1, Time-2 and Time-3.

  This indicates that the experimental teacher and the waitlist control teachers rated their pupils’ suppressing and sustaining attention skills similarly at Baseline, yet the experimental teacher rated their pupils’ suppressing and sustaining attention skills more
highly than the waitlist control teachers rated their pupils’ suppressing and sustaining attention skills at Time-1, Time-2, and Time-3.

- The Naming Total Errors Percentile Rank variable partially confirmed the researcher’s *a priori* hypothesis for the between-condition comparisons as there was a partial condition × time-point interaction. Variable scores did not differ significantly between the experimental group and the WCG at Baseline or Time-2, yet variable scores were significantly higher in the experimental group than the WCG at Time-1 and Time-3.

This indicates that the researcher assessed experimental pupils’ and waitlist control pupils’ sustaining attention skills to be similar at Baseline and Time-2, yet the researcher assessed experimental pupils’ sustaining attention skills to be better than waitlist control pupils’ sustaining attention skills at Time-1 and Time-3.

4.1.4. **RQ1: Other noteworthy patterns within the data**

Other noteworthy patterns within the RQ1 data were as follows:

- Attention Checklist (Das, 2002; see Appendix 1) variable scores in the WCG decreased significantly from pre- to post-intervention, although this inverse intervention effect was not maintained at the 6-week follow-up.

This indicates that the Paws b mindfulness programme had a significantly negative impact upon waitlist control pupils’ suppressing and sustaining attention skills, to the extent that the waitlist control teachers rated their pupils as having displayed worse suppressing and sustaining attention skills within the classroom at post-intervention in comparison to pre-intervention. Furthermore, the waitlist control teachers rated their pupils as
having displayed similar suppressing and sustaining attention skills within the classroom at the 6-week follow-up in comparison to pre-intervention.

- Attention Checklist (Das, 2002; see Appendix 1) variable scores in the total sample did not differ significantly from pre-intervention to post-intervention, nor from pre-intervention to the 6- to 8-week follow-up.

This indicates that the experimental teacher and the waitlist control teachers collectively rated all pupils as having displayed similar suppressing and sustaining attention skills within the classroom at pre-intervention, post-intervention, and the 6- to 8-week follow-up.

- There was no condition × time-point interaction within the Inhibition Total Errors Percentile Rank Variable (NEPSY-II Inhibition subtest; Korkman, Kirk & Kemp, 2007).

This indicates that the researcher assessed experimental pupils’ and waitlist control pupils’ suppressing attention skills to be similar at Baseline, Time-1, Time-2, and Time-3.

4.1.5. **RQ2: Results overview**

The following section was split so that each RQ2 variable had a subsection dedicated to descriptive statistics, non-parametric inferential statistics, and a summary.

4.1.5.1. **Quality of Work Produced in Class: Descriptive statistics**

Quality of Work Produced in Class variable data collected across all four time-points from the experimental group, the WCG, and the total sample are presented in Table 30. Data collected from the
experimental group and the WCG are visually represented in Figure 11.
Table 3. Quality of Work Produced in Class descriptive statistics

<table>
<thead>
<tr>
<th>Condition</th>
<th>Time-point</th>
<th>Intervention stage</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Range</th>
<th>Percentage change within means: Within-condition comparison to pre-intervention (change within means)</th>
<th>Percentage difference between means: Between-condition comparison to equivalent time-point in other condition (difference between means)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>3.8</td>
<td>0.4</td>
<td>0.1</td>
<td>1.43</td>
<td>(2.71-4.14)</td>
<td>-7.99%</td>
</tr>
<tr>
<td></td>
<td>Time-1</td>
<td>Post-intervention</td>
<td>3.89</td>
<td>0.29</td>
<td>0.07</td>
<td>1.16</td>
<td>(3.17-4.33)</td>
<td>-5.58%</td>
</tr>
<tr>
<td></td>
<td>Time-2</td>
<td>Follow-up 1</td>
<td>3.84</td>
<td>0.35</td>
<td>0.09</td>
<td>1.16</td>
<td>(3.17-4.33)</td>
<td>-6.34%</td>
</tr>
<tr>
<td></td>
<td>Time-3</td>
<td>Follow-up 2</td>
<td>3.98</td>
<td>0.36</td>
<td>0.09</td>
<td>1.2</td>
<td>(3.2-4.4)</td>
<td>0.51%</td>
</tr>
<tr>
<td>WCG</td>
<td>Baseline</td>
<td>Pre pre-intervention</td>
<td>4.13</td>
<td>0.46</td>
<td>0.12</td>
<td>1.43</td>
<td>(3.57-5)</td>
<td>8.68%</td>
</tr>
<tr>
<td></td>
<td>Time-1</td>
<td>Pre-intervention</td>
<td>4.12</td>
<td>0.39</td>
<td>0.1</td>
<td>1.17</td>
<td>(3.83-5)</td>
<td>5.91%</td>
</tr>
<tr>
<td></td>
<td>Time-2</td>
<td>Post-intervention</td>
<td></td>
<td></td>
<td></td>
<td>6.77%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
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<td>---------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-3</td>
<td>Follow-up 1</td>
<td>3.96</td>
<td>0.41</td>
<td>0.11</td>
<td>-3.88%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall sample</td>
<td></td>
<td>Pre-intervention</td>
<td>3.95</td>
<td>0.42</td>
<td>0.08</td>
<td>2.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 30)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2.71-5.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-intervention</td>
<td>3.98</td>
<td>0.36</td>
<td>0.07</td>
<td>1.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(3.17-5.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Follow-up 1</td>
<td>3.9</td>
<td>0.37</td>
<td>0.07</td>
<td>1.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(3.17-5.00)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Figure 11. Graph to show changes in mean Quality of Work Produced in Class scores per condition and time-point

4.1.5.2. Quality of Work Produced in Class: Non-parametric inferential statistics

The non-parametric inferential statistics section will be split into three sections: Within-condition comparisons (per condition); within-condition comparisons (per total sample); and, between-condition comparisons, whereby each section will include two sub-sections: reporting and interpretation; and, analysis of a priori hypotheses.

4.1.5.2.1. Within-condition comparisons: Per condition – Reporting and interpretation

As shown in Table 31, in the experimental group, Quality of Work Produced in Class scores did not increase significantly from pre-intervention (median = 4) to post-intervention (median = 3.92), $T = 39$, $p = .337$; from pre-intervention (median = 4) to follow-up 1 (median = 3.83), $T = 45$, $p = .329$; or, from pre-intervention (median = 4) to follow-up 2 (4.1), $T = 23.5$, $p = .065$. 
In the WCG, Quality of Work Produced in Class scores did not increase significantly from pre pre-intervention (median = 4) to pre-intervention (median = 4), $T = 26.5$, $p = .471$. Furthermore, Quality of Work Produced in Class scores did not increase significantly from pre-intervention (median = 4) to post intervention (median = 4), $T = 12$, $p = .422$, or from pre-intervention (median = 4) to follow-up 1 (median = 4), $T = 15.5$, $p = .065$. 
4.1.5.2.2. **Within-condition comparisons: Per condition – Analysis of *a priori* hypotheses**

Table 31. **Within-condition comparisons (per condition) for Quality of Work Produced in Class: Analysis of *a priori* hypotheses**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Non-significant difference: Pre pre- vs. pre-intervention (<em>p</em> &gt; .05)</th>
<th>Significant increase: Pre- vs. post-intervention (<em>p</em> ≤ .05)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 (<em>p</em> ≤ .05)</th>
<th>Maintained at 14-week follow-up: Pre-intervention vs. follow-up 2 (<em>p</em> ≤ .05)</th>
<th>Evidence of maturation effects within the WCG</th>
<th>A <em>priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Work Produced in Class</td>
<td>Experimental group</td>
<td>N/A</td>
<td><em>p</em> = .337</td>
<td><em>p</em> = .329</td>
<td><em>p</em> = .065</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>WCG</td>
<td><em>p</em> = .471</td>
<td><em>p</em> = .422</td>
<td><em>p</em> = .065</td>
<td>N/A</td>
<td></td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.5.2.3. **Within-condition comparisons: Per total sample –**

**Reporting and interpretation**

As shown in Table 32, in the total sample, Quality of Work Produced in Class scores did not differ significantly from pre-intervention (median = 4) to post-intervention (median = 4), $T = 100$, $p = .43$, or from pre-intervention (median = 4) to follow-up 1 (median = 4), $T = 137.5$, $p = .256$. 
4.1.5.2.4. **Within-condition comparisons: Per total sample – Analysis of *a priori* hypotheses**

### Table 32. Within-condition comparisons (per total sample) for Quality of Work Produced in Class: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significant increase: Pre- vs. post-intervention ((p \leq .05))</th>
<th>Maintained at 6-to 8-week follow-up: Pre-intervention vs. follow-up 1 ((p \leq .05))</th>
<th>Evidence of maturation effects contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Work Produced in Class</td>
<td>(p = .43)</td>
<td>(p = .256)</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.5.2.5. **Between-condition comparisons – Reporting and interpretation**

As shown in Table 33, pupils in the experimental group (median = 4) did not differ significantly from pupils in the WCG (median = 4) in terms of Quality of Work Produced in Class scores at Baseline, $U = 75.5$, $p = .06$. At Time-1, pupils in the experimental group (median = 3.92) did not differ significantly from pupils in the WCG (median = 4) in terms of Quality of Work Produced in Class scores, $U = 81$, $p = .095$. At Time-2, pupils in the experimental group (median = 3.83) did not differ significantly from pupils in the WCG (median = 4) in terms of Quality of Work Produced in Class scores, $U = 81.5$, $p = .1$. At Time-3, pupils in the experimental group (median = 4.1) did not differ significantly from pupils in the WCG (median = 4) in terms of Naming Total Completion Time Scaled-Score scores, $U = 95$, $p = .241$. 


4.1.5.2.6. **Between-condition comparisons – Analysis of *a priori* hypotheses**

Table 33. *Between-condition comparisons for Quality of Work Produced in Class: Analysis of *a priori* hypotheses*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-significant difference at Baseline ($p &gt; .05$)</th>
<th>Significant difference at Time-1 ($p \leq .05$): Experimental group &gt; WCG</th>
<th>Non-significant difference at Time-2 ($p &gt; .05$)</th>
<th>Non-significant difference at Time-3 ($p &gt; .05$)</th>
<th>Evidence of maturation effects contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Work Produced in Class</td>
<td>$p = .06$</td>
<td>$p = .095$</td>
<td>$p = .1$</td>
<td>$p = .241$</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis.
4.1.5.3. **Quality of Work Produced in Class: Summary of findings**
In conclusion, as there was not an intervention effect within the experimental group or the WCG, there was no condition × time-point interaction, nor was there an overall intervention effect within the total sample.

4.1.5.4. **Literacy: Descriptive statistics**
Quality of Work Produced in Class variable data collected across all four time-points from the experimental group, the WCG, and the total sample are presented in Table 34. Data collected from the experimental group and the WCG are visually represented in Figure 12.
<table>
<thead>
<tr>
<th>Condition (n)</th>
<th>Time-point</th>
<th>Intervention stage</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Range</th>
<th>Percentage change within means: Within-condition comparison to pre-intervention (change within means)</th>
<th>Percentage difference between means: Between-condition comparison to equivalent time-point in other condition (difference between means)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental (n = 16)</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>35.44</td>
<td>12.65</td>
<td>3.16</td>
<td>33 (17-50)</td>
<td>2.61% (0.94)</td>
<td></td>
</tr>
<tr>
<td>Time-1</td>
<td>Post-intervention</td>
<td>40.81</td>
<td>14.88</td>
<td>3.72</td>
<td>38 (22-60)</td>
<td>15.15% (5.37)</td>
<td>13.36% (4.81)</td>
<td></td>
</tr>
<tr>
<td>Time-2</td>
<td>Follow-up 1</td>
<td>41.69</td>
<td>15.25</td>
<td>3.81</td>
<td>41 (22-63)</td>
<td>17.64% (6.25)</td>
<td>7.7% (2.98)</td>
<td></td>
</tr>
<tr>
<td>Time-3</td>
<td>Follow-up 2</td>
<td>41.94</td>
<td>14.93</td>
<td>3.73</td>
<td>39 (24-63)</td>
<td>18.34% (6.5)</td>
<td>5.62% (2.23)</td>
<td></td>
</tr>
<tr>
<td>WCG (n = 14)</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>34.5</td>
<td>13.79</td>
<td>3.69</td>
<td>41 (8-49)</td>
<td>-4.17% (-1.5)</td>
<td>-2.65% (-0.94)</td>
</tr>
<tr>
<td>Time-1</td>
<td>Pre-intervention</td>
<td>36</td>
<td>13.67</td>
<td>3.65</td>
<td>44 (9-53)</td>
<td>-11.79% (-4.81)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Post-intervention</td>
<td>Pre-intervention</td>
<td>Post-intervention</td>
<td>Follow-up 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
<td>------------------</td>
<td>-------------------</td>
<td>-------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-2</td>
<td>38.71</td>
<td>13.69</td>
<td>3.66</td>
<td>47 (9-56)</td>
<td>7.53% (2.71)</td>
<td>-7.15% (-2.98)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time-3</td>
<td>Follow-up 1</td>
<td>39.71</td>
<td>13.89</td>
<td>3.71</td>
<td>50 (9-59)</td>
<td>10.31% (3.71)</td>
<td>-5.32% (-2.23)</td>
<td></td>
</tr>
<tr>
<td>Overall sample (n = 30)</td>
<td>Pre-intervention</td>
<td>36.97</td>
<td>13.02</td>
<td>2.38</td>
<td>47 (9-56)</td>
<td>9.01% (3.33)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-intervention</td>
<td>40.3</td>
<td>14.37</td>
<td>2.62</td>
<td>54 (9-63)</td>
<td>10.28% (3.8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.1.5.5. **Literacy: Non-parametric inferential statistics**

The non-parametric inferential statistics section will be split into three sections: within-condition comparisons (per condition); within-condition comparisons (per total sample); and, between-condition comparisons, whereby each section will include two sub-sections: reporting and interpretation; and, analysis of *a priori* hypotheses.
4.1.5.5.1. **Within-condition comparisons: Per condition – Reporting and interpretation**

As shown in Table 35, in the experimental group, Literacy scores increased significantly from pre-intervention (median = 37.5) to post-intervention (median = 46), $T = 0, p < .001$, with an estimated effect size of $r = -.64$ (see Rosenthal, 1991, p. 19). Furthermore, this intervention effect was maintained at follow-up 1 (median = 48), $T = 0, p < .001$, with an estimated effect size of $r = -.64$, and at follow-up 2 (median = 48), $T = 0, p < .001$, with an estimated effect size of $r = -.64$.

In the WCG, Literacy scores increased significantly from pre-intervention (median = 40) to pre-intervention (median = 41.5), $T = 0, p = .002$, thus indicating a maturation effect. Furthermore, Literacy scores increased significantly from pre-intervention (median = 41.5) to post-intervention (median = 43), $T = 0, p < .001$, with an estimated effect size of $r = -.56$, and this intervention effect was maintained at follow-up 1 (median = 44), $T = 0, p < .001$, with an estimated effect size of $r = -.58$. 
### 4.1.5.5.2. Within-condition comparisons: Per condition – Analysis of *a priori* hypotheses

#### Table 35. Within-condition comparisons (per condition) for Literacy: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Non-significant difference: Pre pre- vs. pre-intervention ($p &gt; .05$)</th>
<th>Significant increase: Pre- vs. post-intervention ($p \leq .05$)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 ($p \leq .05$)</th>
<th>Maintained at 14-week follow-up: Pre-intervention vs. follow-up 2 ($p \leq .05$)</th>
<th>Evidence of maturation effects within the WCG</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literacy</td>
<td>Experimental group</td>
<td>N/ A</td>
<td>$p &lt; .001$</td>
<td>$p &lt; .001$</td>
<td>$p &lt; .001$</td>
<td>Yes</td>
<td>No (maturation effect within the WCG)</td>
</tr>
<tr>
<td>WCG</td>
<td>$p = .002$ (maturation effect)</td>
<td>$p &lt; .001$</td>
<td>$p &lt; .001$</td>
<td>$p &lt; .001$</td>
<td>N/ A</td>
<td>No (maturation effect within the WCG)</td>
<td></td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.5.5.3. **Within-condition comparisons: Per total sample – Reporting and interpretation**

As shown in Table 36, in the total sample, Literacy scores increased significantly from pre-intervention (median = 43) to post-intervention (median = 45.5), $T = 0, p < .001$, with an estimated effect size\(^\text{12}\) of $r = -.64$ (see Rosenthal, 1991, p. 19). Furthermore, this intervention effect was maintained at follow-up 1 (median = 44), $T = 0, p < .001$, with an estimated effect size\(^\text{12}\) of $r = -.82$. 
4.1.5.5.4. Within-condition comparisons: Per total sample – Analysis of _a priori_ hypotheses

**Table 36. Within-condition comparisons (per total sample) for Literacy: Analysis of _a priori_ hypotheses**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significant increase: Pre- vs. post-intervention ((p \leq .05))</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 ((p \leq .05))</th>
<th>Evidence of maturation effects contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literacy</td>
<td>(p &lt; .001)</td>
<td>(p &lt; .001)</td>
<td>Yes (see Table 35)</td>
<td>No (maturation effect contamination)</td>
</tr>
</tbody>
</table>

Note: In-line with _a priori_ hypothesis. Not in-line with _a priori_ hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.5.5.5. **Between-condition comparisons – Reporting and interpretation**

As shown in Table 37, pupils in the experimental group (median = 37.5) did not differ significantly from pupils in the WCG (median = 40) in terms of Literacy scores at Baseline, $U = 102.5$, $p = .352$. At Time-1, pupils in the experimental group (median = 46) did not differ significantly from pupils in the WCG (median = 41.5) in terms of Literacy scores, $U = 90$, $p = .185$. At Time-2, pupils in the experimental group (median = 48) did not differ significantly from pupils in the WCG (median = 43) in terms of Literacy scores, $U = 90.5$, $p = .191$. At Time-3, pupils in the experimental group (median = 48) did not differ significantly from pupils in the WCG (median = 44) in terms of Literacy scores, $U = 94.5$, $p = .239$. 
4.1.5.6. Between-condition comparisons – Analysis of *a priori* hypotheses

Table 37. *Between-condition comparisons for Literacy: Analysis of a priori hypotheses*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-significant difference at Baseline <em>(p &gt; .05)</em></th>
<th>Significant difference at Time-1 <em>(p ≤ .05)</em>: Experimental group &gt; WCG</th>
<th>Non-significant difference at Time-2 <em>(p &gt; .05)</em></th>
<th>Non-significant difference at Time-3 <em>(p &gt; .05)</em></th>
<th>Evidence of maturation effects contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literacy</td>
<td>$p = .352$</td>
<td>$p = .185$</td>
<td>$p = .191$</td>
<td>$p = .239$</td>
<td>Yes <em>(see Table 35)</em></td>
<td>No (maturation effects contamination)</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis.
4.1.5.6. **Literacy: Summary of findings**

In conclusion, there was a significant pre- vs. post-intervention effect within the experimental group and the WCG with large estimated effect sizes, whereby the intervention effect within the experimental group was maintained at the 8-week and 14-week follow-ups with large estimated effect sizes, whilst the intervention effect within the WCG was maintained at the 6-week follow-up, also with a large estimated effect size. Nonetheless, there was no condition × time-point interaction. There was also a significant overall pre vs. post-intervention effect within the total sample with a large estimated effect size, whereby the overall intervention effect was maintained at the 6- to 8-week follow-up, also with a large estimated effect size. However, as there was a significant pre pre-vs. pre-intervention maturation effect within the WCG, the validity of the intervention effects noted within the experimental group and the WCG, and the total sample, is thus brought into question.

4.1.5.7. **Numeracy: Descriptive statistics**

Numeracy variable data collected across all four time-points from the experimental group, the WCG, and the total sample are presented in Table 38. Data collected from the experimental group and the WCG are visually represented in Figure 13.
Table 38. *Numeracy descriptive statistics*

<table>
<thead>
<tr>
<th>Condition (n)</th>
<th>Time-point</th>
<th>Intervention stage</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Standard error</th>
<th>Range</th>
<th>Percentage change within means: Within-condition comparison to pre-intervention (change within means)</th>
<th>Percentage difference between means: Between-condition comparison to equivalent time-point in other condition (difference between means)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental (n = 16)</td>
<td>Baseline</td>
<td>Pre-intervention</td>
<td>10.5</td>
<td>2.97</td>
<td>0.74</td>
<td>9 (7-16)</td>
<td>-11.47% (-1.36)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-1</td>
<td>Post-intervention</td>
<td>12.25</td>
<td>2.86</td>
<td>0.72</td>
<td>9 (8-17)</td>
<td>16.67% (1.75)</td>
<td>-10.65% (-1.46)</td>
</tr>
<tr>
<td></td>
<td>Time-2</td>
<td>Follow-up 1</td>
<td>13.06</td>
<td>2.93</td>
<td>0.73</td>
<td>9 (9-18)</td>
<td>24.38% (2.56)</td>
<td>-6.25% (-0.87)</td>
</tr>
<tr>
<td></td>
<td>Time-3</td>
<td>Follow-up 2</td>
<td>13.63</td>
<td>3.18</td>
<td>0.8</td>
<td>9 (10-19)</td>
<td>29.81% (3.13)</td>
<td>-6% (-0.87)</td>
</tr>
<tr>
<td>WCG (n = 14)</td>
<td>Baseline</td>
<td>Pre pre-intervention</td>
<td>11.86</td>
<td>4.82</td>
<td>1.29</td>
<td>16 (1-17)</td>
<td>-13.49% (-1.85)</td>
<td>12.95% (1.36)</td>
</tr>
<tr>
<td></td>
<td>Time-1</td>
<td>Pre-intervention</td>
<td>13.71</td>
<td>5.28</td>
<td>1.41</td>
<td>18 (3-21)</td>
<td>11.92% (1.46)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time-2</td>
<td>Post-intervention</td>
<td>13.93</td>
<td>5.11</td>
<td>1.36</td>
<td>17 (4-21)</td>
<td>1.6% (0.22)</td>
<td>6.66% (0.87)</td>
</tr>
<tr>
<td>------------------</td>
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<td>-----------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Time-3</td>
<td>Follow-up 1</td>
<td></td>
<td>14.5</td>
<td>4.94</td>
<td>1.32</td>
<td>16 (5-21)</td>
<td>5.76% (0.79)</td>
<td>6.38% (0.87)</td>
</tr>
<tr>
<td>Overall sample</td>
<td>Pre-intervention</td>
<td></td>
<td>12</td>
<td>4.44</td>
<td>0.81</td>
<td>18 (3-21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 30)</td>
<td>Post-intervention</td>
<td></td>
<td>13.03</td>
<td>4.08</td>
<td>0.75</td>
<td>17 (4-21)</td>
<td>8.53% (1.03)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Follow-up 1</td>
<td></td>
<td>13.73</td>
<td>3.99</td>
<td>0.73</td>
<td>16 (5-21)</td>
<td>14.42% (1.73)</td>
<td></td>
</tr>
</tbody>
</table>
4.1.5.8. **Numeracy: Non-parametric inferential statistics**

The non-parametric inferential statistics section will be split into three sections: within-condition comparisons (per condition); within-condition comparisons (per total sample); and, between-condition comparisons, whereby each section will include two sub-sections: reporting and interpretation; and, analysis of *a priori* hypotheses.

4.1.5.8.1. **Within-condition comparisons: Per condition – Reporting and interpretation**

As shown in Table 39, in the experimental group, Numeracy scores increased significantly from pre-intervention (median = 9.5) to post-intervention (median = 11.5), $T = 2.5$, $p < .001$, with an estimated effect size$^{12}$ of $r = -.64$ (see Rosenthal, 1991, p. 19). Furthermore, this intervention effect was maintained at follow-up 1 (median = 12), $T = 0$, $p < .001$, with an estimated effect size$^{12}$ of $r = -.65$, and at follow-up 2 (median = 13.5), $T = 0$, $p < .001$, with an estimated effect size$^{12}$ of $r = -.65$. 

*Figure 13. Graph to show changes in mean Numeracy scores per condition and time-point*
In the WCG, Numeracy scores increased significantly from pre-pre-intervention (median = 12) to pre-intervention (median = 13.5), $T = 0, p = .002$, thus indicating a maturation effect with an estimated effect size$^{12}$ of $r = -.59$. However, Numeracy scores did not increase significantly from pre-intervention (median = 13.5) to post-intervention (median = 14.5), $T = 0, p = .25$. Nonetheless, Numeracy scores did increase significantly from pre-intervention (median = 13.5) to follow-up 1 (median = 15), $T = 0, p = .004$. 
### 4.1.5.8.2. Within-condition comparisons: Per condition – Analysis of a priori hypotheses

#### Table 39. Within-condition comparisons (per condition) for Numeracy: Analysis of a priori hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Condition</th>
<th>Non-significant difference: Pre pre- vs. pre-intervention ($p &gt; .05$)</th>
<th>Significant increase: Pre- vs. post-intervention ($p \leq .05$)</th>
<th>Maintained at 6- to 8-week follow-up: Pre-intervention vs. follow-up 1 ($p \leq .05$)</th>
<th>Maintained at 14-week follow-up: Pre-intervention vs. follow-up 2 ($p \leq .05$)</th>
<th>Evidence of maturation effects within the WCG</th>
<th>A priori hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeracy</td>
<td>Experimental group</td>
<td>N/ A</td>
<td>$p &lt; .001$</td>
<td>$p &lt; .001$</td>
<td>$p &lt; .001$</td>
<td>Yes</td>
<td>No (maturation effect within the WCG)</td>
</tr>
<tr>
<td>WCG</td>
<td></td>
<td>$p = .002$ (maturation effect)</td>
<td>$p = .25$</td>
<td>$p = .004$</td>
<td>N/ A</td>
<td></td>
<td>No (maturation effect within the WCG)</td>
</tr>
</tbody>
</table>

Note: In-line with a priori hypothesis. Not in-line with a priori hypothesis. Significant results with large estimated effect sizes are in **bold**.
4.1.5.8.3. **Within-condition comparisons: Per total sample – Reporting and interpretation**

As shown in Table 40, in the total sample, Numeracy scores increased significantly from pre-intervention (median = 11.5) to post-intervention (median = 12), $T = 3, p < .001$, with an estimated effect size\(^2\) of $r = .68$ (see Rosenthal, 1991, p. 19). Furthermore, this intervention effect was maintained at follow-up 1 (median = 13.5), $T = 0, p < .001$, with an estimated effect size\(^2\) of $r = .79$. 
4.1.5.8.4. **Within-condition comparisons: Per total sample – Analysis of *a priori* hypotheses**

### Table 40. Within-condition comparisons (per total sample) for Numeracy: Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Significant increase: Pre- vs. post-intervention ((p \leq .05))</th>
<th>Maintained at 6-to 8-week follow-up: Pre-intervention vs. follow-up 1 ((p \leq .05))</th>
<th>Evidence of maturation effects contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeracy</td>
<td>(p &lt; .001)</td>
<td>(p &lt; .001)</td>
<td>Yes (see Table 39)</td>
<td>No (maturation effect contamination)</td>
</tr>
</tbody>
</table>

Note: *In-line with a priori hypothesis*. Not *in-line with a priori hypothesis*. Significant results with large estimated effect sizes are in **bold**.
4.1.5.8.5. Between-condition comparisons – Reporting and interpretation

As shown in Table 41, pupils in the experimental group (median = 9.5) did not differ significantly from pupils in the WCG (median = 12) in terms of Numeracy scores at Baseline, \( U = 78, p = .08 \). At Time-1, pupils in the experimental group (median = 11.5) did not differ significantly from pupils in the WCG (median = 13.5) in terms of Numeracy scores, \( U = 82, p = .108 \). At Time-2, pupils in the experimental group (median = 12) did not differ significantly from pupils in the WCG (median = 14.5) in terms of Numeracy scores, \( U = 91, p = .195 \). At Time-3, pupils in the experimental group (median = 13.5) did not differ significantly from pupils in the WCG (median = 15) in terms of Numeracy scores, \( U = 93.5, p = .225 \).
### 4.1.5.8.6. Between-condition comparisons – Analysis of *a priori* hypotheses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Non-significant difference at Baseline ((p &gt; .05))</th>
<th>Significant difference at Time-1 ((p \leq .05): \text{Experimental group} &gt; \text{WCG})</th>
<th>Non-significant difference at Time-2 ((p &gt; .05))</th>
<th>Non-significant difference at Time-3 ((p &gt; .05))</th>
<th>Evidence of maturation effects contamination</th>
<th><em>A priori</em> hypothesis confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeracy</td>
<td>(p = .08)</td>
<td>(p = .108)</td>
<td>(p = .195)</td>
<td>(p = .225)</td>
<td>Yes (see Table 39)</td>
<td>No (maturation effects contamination)</td>
</tr>
</tbody>
</table>

Note: In-line with *a priori* hypothesis. Not in-line with *a priori* hypothesis.
4.1.5.9. **Numeracy: Summary of findings**

In conclusion, there was a significant pre- vs. post-intervention effect within the experimental group, but not within the WCG, with a large estimated effect size, whereby the intervention effect within the experimental group was maintained at the 8-week and 14-week follow-ups with large estimated effect sizes. Nonetheless, there was a significant pre-intervention vs. follow-up 1 effect within the WCG. Hence, there was no condition × time-point interaction. Furthermore, there was a significant overall pre vs. post-intervention effect within the total sample with a large estimated effect size, whereby the overall intervention effect was maintained at the 6- to 8-week follow-up, also with a large estimated effect size. However, as there was a significant pre pre- vs. pre-intervention maturation effect within the WCG with a large estimated effect size, the validity of the intervention effects noted within the experimental group and the WCG, and the total sample, is thus brought into question.

4.1.6. **RQ2: Executive summary of findings**

In conclusion, there were no main findings in answer to RQ2 due to the lack of intervention effects within the Quality of Work Produced in Class variable and the presence of maturation effects within the Literacy and Numeracy variables.

4.2. **Qualitative data analysis**

For the purpose of the qualitative data analysis section, and as stated in Section 3.1., RQ3 is as follows:

*RQ3. What aspects of the Paws .b mindfulness programme are perceived to be beneficial/non-beneficial by mainstream Primary School aged pupils and their teachers?*
4.2.1. **RQ3: Results overview**

As discussed in Section 3.5.2., there were four pupil FGs: one involving four boys from the experimental group at Time-1; one involving four girls from the experimental group at Time-1; one involving four boys from the WCG at Time-2; and, one involving four girls from the WCG at Time-2. (See Appendices 22 to 29 for FG transcripts and pupils’ answers to the pen and paper activity.) There were also three semi-structured interviews: one involving the experimental teacher at Time-1; one involving the waitlist control teachers at Time-2; and, one involving the mindfulness teacher at Time-2. (See Appendices 31, 32 and 34 for interview transcripts.)

In line with Braun and Clarke’s (2006) six phase TA, the raw data from the FG and interview transcripts were coded (see Appendices 30, 33 and 35) and arranged into themes and sub-themes (see Appendix 36). In order to answer RQ3, and for the purpose of the following section, two research sub-questions were created:

*RQ3(a). What aspects of the Paws .b mindfulness programme were perceived to be beneficial by the experimental and waitlist control pupils, the experimental teacher and waitlist control teachers, and the mindfulness teacher?*

*RQ3(b). What aspects of the Paws .b mindfulness programme were perceived to be non-beneficial by experimental and waitlist control pupils, the experimental teacher and waitlist control teachers, and the mindfulness teacher?*

Thus, the following section will be split into two, whereby each section will begin with a thematic map to graphically represent the relationship between the themes (represented by orange squares) and sub-themes (represented by red rounded rectangles) that answer each of the research sub-questions. Each section will then be sub-divided so that exemplary
data extracts pertaining to each sub-themes can be presented and discussed.

4.2.1.1. **RQ3(a). What aspects of the Paws .b mindfulness programme were perceived to be beneficial by the experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher?**

There were three themes which pertained to the aspects of the Paws .b mindfulness programme that were perceived to be beneficial by the experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher: the Paws .b mindfulness programme was positively evaluated; the Paws .b mindfulness programme facilitated pupil gains; and, there was a positive interface between the Paws .b mindfulness programme, the mindfulness teacher, and the pupils (see Figure 14).
RQ3(a): What aspects of the Paws .b mindfulness programme were perceived to be beneficial by the experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher?

- Most pupils positively evaluated Paws .b
- Class teachers felt that their pupils positively evaluated Paws .b
- Class teachers positively evaluated Paws .b
- The Paws .b mindfulness programme was positively evaluated
- Paws .b helped develop teacher-pupil relationships
- Paws .b enabled pupils to catch the experience of mindfulness
- Paws .b was well suited to Year-4 pupils
- Paws .b developed pupils’ mindfulness skills for future use
- There was a positive interface between the Paws .b mindfulness programme, the mindfulness teacher, and the pupils
- The Paws .b mindfulness programme facilitated pupil gains
- The mindfulness teacher felt that pupils made cognitive and emotional gains
- Pupils reported cognitive and emotional gains
- Class teachers felt that their pupils made cognitive, emotional, and behavioural gains
- The mindfulness teacher had a positive experience of delivering Paws .b
- Paws .b was well suited

Figure 14. Aspects of the Paws .b mindfulness programme that were perceived to be beneficial by experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher
4.2.1.1. **The Paws .b mindfulness programme was positively evaluated**

This theme contained three sub-themes: most pupils positively evaluated Paws .b; class teachers felt that their pupils positively evaluated Paws .b; and, class teachers positively evaluated Paws .b. Each sub-theme will now be discussed in turn. Where reference is made to codes, these are presented in italics.

4.2.1.1.1. **Most pupils positively evaluated Paws .b**

There was a general feeling that *pupils enjoyed Paws .b.* For example, a group of three pupils noted that Paws .b was not only enjoyable, but an experience that they would like to repeat.

- **Ina25:** “I really liked it – I want to do it again.”

  **Kha22:** “Yeah.”

  **Tan20:** “Yeah.”

  **Ina25:** “I want to do it all over again, like all over again.”

  **Tan20:** “Yeh.”

  **Ina25:** “From the start.”

Furthermore, it appeared that *pupils were instilled with a pioneering sense of pride having received Paws .b.* For example, one pupil recognised that Harry Close Primary Academy was in a pioneering position in terms of being able to offer Paws .b to its pupils. This suggests that
pupils not only enjoyed Paws .b and recognised that they were in a unique position to have received it, but felt that pupils in other schools would also enjoy Paws .b.

- **Waj03**: “I never knew what it (reference to Paws .b) was and I think that our school is very lucky to do mindfulness and I don’t think other schools get to do mindfulness.”

4.2.1.1.1.2. **Class teachers felt that their pupils positively evaluated Paws .b**

An interesting observation from the class teachers’ perspective was that pupils enjoyed that Paws .b was un-reliant on intelligence. For example, the experimental teacher felt that pupils were likely to have enjoyed that there was no right and wrong in Paws .b.

- **Experimental teacher**: “It’s not a case of, “If you’re really intelligent, you’ll be really good at this.” Or that there is no good or being good at it (reference to Paws .b). The kids probably really liked that part of it as well.”

Furthermore, the class teachers observed that pupils saw Paws .b as different to typical lessons. For example, the experimental teacher highlighted that pupils saw Paws .b lessons as qualitatively different to other lessons in terms of them being empowered to learn about themselves and learn mindfulness practices that can support them in daily life.

- **Experimental teacher**: “I suppose, as well, it’s (reference to Paws .b) a lesson where they don’t see it as a lesson. It’s not lots of literacy. So it’s a time
(reference to pupils) for them to learn about *them.* They’re not learning something that we’re going to test. It’s just about learning about *you* and doing things for *you.*”

4.2.1.1.3. **Class teachers positively evaluated Paws .b**

It was felt that *Paws .b evoked interest in class teachers.* For example, the second waitlist control teacher explained that the experience of their pupils receiving Paws .b evoked their curiosity around mindfulness, to the extent that they wanted to attend adult mindfulness classes and learn how use mindfulness practices in the classroom with their pupils.

- **Second waitlist control teacher:** “But I’m now thinking that I’m going to go to the mindfulness drop-in sessions (for adults) because I’m really interested to know what it would be like from an adult perspective.”

  **Researcher:** “So has Paws .b intrigued you?”

  **Second waitlist control teacher:** “Yeah. Yeah. It really has. Because I wanted to do it (reference to mindfulness) before but I couldn’t, and I’d really like to do some (mindfulness) myself with the kids, I mean, they know more than I do at the moment, you know.

Furthermore, the class teachers saw *Paws .b as something the school should do again.* For example, when asked by the researcher, the waitlist control teachers felt that Paws .b was something Harry Close Primary Academy should offer to their pupils again in the future.
Researcher: “So from your experience of Paws .b, is it something that the school should do again?”

First waitlist control teacher: “Definitely.”

Second waitlist control teacher: “I think so.”

4.2.1.2. The Paws .b mindfulness programme facilitated pupil gains
This theme contained three sub-themes: pupils reported cognitive and emotional gains; class teachers felt that their pupils made cognitive, emotional and behavioural gains; and, the mindfulness teacher felt that pupils made cognitive and emotional gains. Each sub-theme will now be discussed in turn. Where reference is made to codes, these are presented in italics.

4.2.1.2.1. Pupils reported cognitive and emotional gains
There was a strong feeling that pupils found Paws .b to be helpful for reducing distractibility and improving concentration. For example, one pupil felt that Paws .b allowed them to practice concentrating and improved their ability to bring their concentration back when it had wandered off.

- Tan20: “[Y]ou can use it (reference to Paws .b) and then you have to concentrate on what you’re doing, but if you can’t concentrate, it’s okay because your brain will help bring it (reference to concentration) back to you.”

Researcher: “Right, so it would help my pupils calm down and it would help them learn how to
concentrate better. But if their attention wanders, did you say that Paws .b teaches them how to bring their attention back?”

**Tan20**: “Yes.”

Furthermore, pupils found Paws .b to be helpful for managing difficult situations. For example, one pupil felt that Paws .b allowed them to manage their emotions and forget about their experiences of bullying.

- **Ghu31**: “[I]f we have something like bullying, bad things happen to you, if you do mindfulness, you cannot remember those times.”

4.2.1.2.2. **Class teachers felt that their pupils made cognitive, emotional, and behavioural gains**

Class teachers felt that Paws .b helped pupils become more focused. For example, the second waitlist control teacher highlighted a positive change in terms of their pupils seeming more focussed following Paws .b.

- **Second waitlist control teacher**: “Well, a lot of them (reference to the pupils) seem more focussed.”

Furthermore, the experimental teacher provided an example of Paws .b helping a pupil overcome their fear of swimming, whereby the experimental teacher highlighted a positive change in terms of one of their pupils being less anxious and more confident with swimming following Paws .b.

- **Experimental teacher**: “You know, there were simple little things like Nis11 was really scared by
going swimming. Nis11 became very anxious all the time, but they are now in the water and Nis11 is doing alright. Nis11 is a lot more confident.”

Furthermore, the experimental teacher also provided an example of Paws .b helping a pupil engage more in lessons, whereby the experimental teacher highlighted a positive change in terms of one of their pupils becoming more involved/ listening more/ showing a greater interest during lessons and small group work, to the extent that this pupil made noticeable gains in their literacy and numeracy attainments following Paws .b.

- **Experimental teacher:** “And then Moh15, who just always seemed to be away in another world during lessons. You would ask Moh15 a question and they were never really able to respond with an answer. Even within small group work with the Primary Learning Mentors, they found the same thing – Moh15 would never be listening, they weren’t getting involved in any of the lessons. That was in literacy and numeracy – it was in everything. There was nothing that seemed to interest Moh15 like they were in another world. And since Christmas (reference to the beginning of Paws .b for the experimental group), Moh15 is listening all the time; Moh15 is really involved in all of the lessons; Moh15 had made loads of progress in numeracy; Moh15 has made some progress in literacy.”

4.2.1.2.3. **The mindfulness teacher felt that pupils made cognitive and emotional gains**

The mindfulness teacher observed that Paws .b improved pupils’ ability to notice mind wanderings, whereby the
mindfulness teacher felt that pupils became increasingly able to notice when their mind had wandered away from their breathing and onto something distracting, such as noise, and that this served to improve pupils’ attention in lessons.

- Mindfulness teacher: “And being able to really explain that to the children so that when they put their hand up and say, “I was really distracted today by noises outside the window,” but for them to realise that that is still something to celebrate that they were less focused and that they found it hard to keep their attention on their breathing. They were aware that their mind was going to those noises. They were aware that that was what was distracting them – what an amazing level of noticing that that child was doing after 5-hours (of Paws .b).”

Furthermore, the mindfulness teacher felt that *Paws .b militates against stressors at school and at home*, whereby the mindfulness teacher highlighted that *Paws .b* allowed pupils to experience peace and quiet, and psychological space, that can otherwise be compromised by the demanding nature of the National Curriculum and the often chaotic nature of children’s homes, particularly as the majority of pupils at Harry Close Primary Academy live in large families and busy households.

- Mindfulness teacher: “Thinking just from an education point of view, it’s relentless. We don’t allow our children to be still. It’s all about engagement; stimulation; learning; progress, and that’s good and that has its place. And I think in the home it’s similar. It’s all about stimulating and
experiences and opportunities, and they sit in front of screens, and a lot of our children live in big families and busy households. A lot of them, they don’t have their own bedroom; physically, they’re never isolated – they never have that quiet. So I think we’ve given them, through the Paws .b curriculum, a way of finding a bit of space – finding peace in a frantic world, but at their level. We might, as adults, say that they (reference to the pupils) don’t have the stress that we have. But I think, to them, they really do, and they feel that pressure, but at an age-appropriate level.”

4.2.1.3. **There was a positive interface between the Paws .b mindfulness programme, the mindfulness teacher, and the pupils**

This theme contains five sub-themes: Paws .b developed pupils’ mindfulness skills for future use; Paws .b helped develop teacher-pupil relationships; Paws .b was well suited to Year-4 pupils; Paws .b enabled pupils to catch the experience of mindfulness; and, the mindfulness teacher had a positive experience of delivering Paws .b. Each sub-theme will now be discussed in turn. Where reference is made to codes, these are presented in italics.

4.2.1.3.1. **Paws .b developed pupils’ mindfulness skills for future use**

The class teachers observed that most pupils used mindfulness practices outside of Paws .b lessons. For example, the second waitlist control teacher observed a number of their pupils undertaking mindfulness practices spontaneously during typical lessons, whilst other pupils asked the second waitlist control teacher if they could undertake a mindfulness practice, thus demonstrating that
Paws .b teaches pupils to adapt and generalise their mindfulness skills outside of Paws .b lessons.

- **Second waitlist control teacher:** “A lot of them seem to be putting their mindfulness approaches into practice – I’ve seen quite a few sat there like this (demonstrates putting their hands on their lap, their feet flat on the floor and closing their eyes).”

  **Researcher:** “Interesting.”

  **Second waitlist control teacher:** “Moh22 asked if she could practise mindfulness and I said, “Yes”. Which was nice.”

Furthermore, there was a strong feeling amongst the class teachers and the mindfulness teacher that *Paws .b developed pupils mindfulness skills for future use.* For example, the mindfulness teacher recounted action-planning with pupils at the end of Paws .b to ensure that pupils capitalised on the mindfulness skills that they had learnt and planned how they could use such skills in daily life, again demonstrating that Paws .b teaches pupils to adapt and generalise their mindfulness skills outside of Paws .b lessons.

- **Mindfulness teacher:** “And I really made sure that I emphasised that in the last (Paws .b) lesson, making sure there was a proper 5-minutes at the end to wrap it up really and say, “From me coming in and teaching you (Paws .b), that’s the end and I’m not coming back. But, this is just the beginning – you’ve got all the tools you need. It’s now down to you to use it as and when you want, and when you need to.”
This is it – you’ve got the skills.” Almost action-planning with them, saying, “We’ve done these practices – which one works best for you? Which one do you find easiest? Where is good for you? When is good for you – what time of day?” All that stuff.”

4.2.1.3.2. **Paws .b helped develop teacher-pupil relationships**

An interesting observation from the mindfulness teacher was that *Paws .b led to greater mutual respect between pupils and the mindfulness teacher*. For example, the mindfulness teacher explained that through the process of sharing deep and personal information, a culture of mutual respect was engendered between pupils and the mindfulness teacher, over and above that which already existed within the school system.

- **Mindfulness teacher:** “But this (reference to Paws .b) has given me an opportunity to share myself with them (reference to the pupils) at quite a deep, personal level actually, which I think has brought about a lot of mutual respect between myself and the pupils.”

Furthermore, the mindfulness teacher felt that *Paws .b would quickly build closeness between class teachers and their pupils*. For example, the mindfulness teacher highlighted that if Paws .b was delivered by class teachers at the beginning of the academic year, it would quickly foster teacher-pupil, and pupil-pupil, relationships and closeness, and that this could be a strategic decision made within the whole-school.
- **Mindfulness teacher:** “I think it’s always a shock to teach, especially when you’re new to teaching, you come back in September and it’s really cold. You feel very distant from your kids and that relationship is very cold and I suppose all we (reference to the teaching profession) have ever had before is time for them to get to know you and have shared experiences. But I think mindfulness as an additional tool that you could add into the (school) curriculum, perhaps, would be an amazing way of, within that first 6-weeks (of term), creating that relationship, not just between the teacher and pupils, but between the pupils themselves in the class.”

4.2.1.3.3. **Paws .b was well-suited to Year-4 pupils**

Through their delivery of Paws .b, the mindfulness teacher observed that *pupils quickly engaged with the Paws .b curriculum content.* For example, the mindfulness teacher was taken aback upon noting the speed at which pupils developed an understanding of mindfulness, as well as the associated curriculum knowledge, such as neuroscience.

- **Mindfulness teacher:** “I was really staggered to see how quickly, considering that it’s just a 6-hour intervention, how quickly, as the weeks progressed… the change, not only in the children’s understanding about mindfulness as a concept, (but) the mechanics of how their brain works and stuff, so that basic skills and knowledge level – they retained that really, really well.
Paws .b enabled pupils to catch the experience of mindfulness

The mindfulness teacher used a helpful analogy to explain that Paws .b enabled pupils to catch the experience of mindfulness, and once pupils had caught the experience of mindfulness, they engaged more readily with Paws .b mindfulness practices. For example, the mindfulness teacher noticed that once pupils had caught the experience of mindfulness, e.g., during a Paws .b lesson/ Paws .b mindfulness practice, pupils engaged more readily in Paws .b mindfulness practices thereafter and for longer periods of time.

- Mindfulness teacher: “I hadn’t really thought beforehand how there would actually be a tangible difference that I would see as the (mindfulness) teacher, you know, literally looking at my watch and going, “Oh wow – that was 6-minutes (of a Paws .b mindfulness practice).” You know, we were starting off (the Paws .b mindfulness practices) doing 1-minute, 2-minutes… so…”

The mindfulness teacher had a positive experience of delivering Paws .b

Lastly, it was noteworthy that Paws .b became a joy for the mindfulness teacher to deliver, whereby the mindfulness teacher highlighted that once they had overcome the initial stress and difficulty of introducing Paws .b to the pupils, it became more and more of a joy for them to deliver.

- Mindfulness teacher: “Reflecting back, seeing how my stress levels diminished as the teaching (of Paws .b) went on, it became more of a joy.”
RQ3(b). What aspects of the Paws .b mindfulness programme were perceived to be non-beneficial by the experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher?

There were two themes which pertained to the aspects of the Paws .b mindfulness programme that were perceived to be non-beneficial by the experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher: aspects of the Paws .b mindfulness programme could be improved; and, the Paws .b mindfulness programme does have its disadvantages (see Figure 15).
Figure 15. Aspects of the Paws .b mindfulness programme that were perceived to be non-beneficial by experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher
4.2.1.2.1. **Aspects of the Paws .b mindfulness programme could be improved**

This theme contained three sub-themes: pupils felt that improvements could be made to the Paws .b mindfulness curriculum and practices; class teachers felt that improvements could be made to the implementation of Paws .b; and, the mindfulness teacher felt that the coordination and differentiation of Paws .b could be improved. Where reference is made to codes, these are presented in italics.

4.2.1.2.1.1. **Pupils felt that improvements could be made to the Paws .b curriculum and mindfulness practices**

It became apparent that some pupils wanted to extend the length of the Paws .b mindfulness curriculum/ change the format of the Paws .b mindfulness curriculum. For example, two pupils felt that Paws .b could be improved by shortening the length of its lessons (e.g., half-an-hour), yet making lessons more frequent (e.g., twice a week).

- **Sha23:** “[M]indfulness needs to be in the morning or the afternoon – it should be for half a day. It should be longer.”

  **Researcher:** “Okay, what does everyone else think about Sha23’s suggestion?”

- **Jem29:** “I disagree with Sha29 – it should be shorter time but more weeks. You could do it twice a week so it can be shorter.”

  **Researcher:** “So you think that the lessons should be shorter, say half-an-hour, but more frequent.”

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Jem29: “You can do it twice a week.”

Sha23: “That’s what I meant.”

Researcher: “Oh, so that’s what you meant Sha23?”

Sha23: “Yeah.”

Furthermore, it became apparent that some pupils wanted a greater variety of Paws .b mindfulness practices. For example, two pupils felt that Paws .b could be improved by introducing more mindfulness practices, and that this would allow pupils to learn more about mindfulness and further its positive impact.

- Per18: “We need more (Paws .b mindfulness) practices.”

Ghu31: “I agree with Per18 because when we do more practice, we can learn about more mindfulness and everybody can be cooled down.”

4.2.1.2.1.2. Class teachers felt that improvements could be made to the implementation of Paws .b

There was an incredibly strong and consistent message from the class teachers that it would be ideal for mindfulness teachers to also be class teachers. For example, the second waitlist control teacher felt that Paws .b could be improved by class teachers taking a more active role in delivering Paws .b to their pupils, to the extent that class teachers could undertake mindfulness practices with their pupils, rather than simply talking to them about the mindfulness practices that they had undertaken with the mindfulness teacher.
- **Second waitlist control teacher:** “I’ve just found it really interesting. I think, if we (reference to Harry Close Primary Academy) were to do it again, I mean, it was really beneficial for me to have that time out (of the classroom when the mindfulness teacher was delivering Paws .b), but at the same time, I’d like to have taken a more active role if we did (Paws .b) again. Taking a more active approach would be good, because it’s all well and good talking to them (reference to the pupils) afterwards and them being all, “Yeah, it was great!””

Furthermore, class teachers felt that *Paws .b could be improved by it being more embedded within the school*. For example, the experimental teacher felt that Paws .b stood to have greatest impact in the future if it was adopted as a whole-school intervention (i.e., not restricted to Year-4) and if there was continuous mindfulness provision throughout the school (i.e., not restricted to a 6-week intervention).

- **Experimental teacher:** “If the school was to do it (reference to delivering Paws .b again), it would need to be a whole-school approach and it would need to be a continuous programme for it to be of benefit.”

4.2.1.2.1.3. **The mindfulness teacher felt that the coordination and differentiation of Paws .b could be improved**

As discussed above, not only did the class teachers feel that it would be ideal for mindfulness teachers to also be class teachers, but the mindfulness teacher felt that *it would be beneficial for pupils’ class teachers to deliver*
For example, the mindfulness teacher felt that a natural extension of Paws.b would be for class teachers to have delivered Paws.b so that they could introduce daily mindfulness practices to their pupils and use mindfulness practices more responsively throughout the school day, as and when required.

- **Mindfulness teacher:** “I think it would be lovely, obviously, to have the person delivering it (reference to Paws.b) being that class teacher, that you can just then carry on and do daily (Paws.b mindfulness) practices with the class, as and when. You know, first thing in the morning; first thing after lunch; before you go home, just doing one of those (Paws.b mindfulness) practices to get that stillness and settling would be amazing.”

**Researcher:** “Yes. So more responsive use of Paws.b mindfulness practices?”

**Mindfulness teacher:** “Yeah.”

Furthermore, with a view to improving Paws.b, the mindfulness teacher had a view that good differentiation could consist of delivering Paws.b in small groups, and that this would more closely match more conventional methods of curriculum delivery.

- **Mindfulness teacher:** “Had we had the opportunity to do small group-focussed mindfulness, it would have been amazing.”
4.2.1.2.2. **The Paws .b mindfulness programme does have its disadvantages**

This theme contained four sub-themes: some pupils negatively evaluated the Paws .b mindfulness programme and practices; class teachers questioned the impact and transferability of Paws .b; the mindfulness teacher felt that Paws .b was not sufficiently differentiated; and, the mindfulness teacher felt that Paws .b required careful preparation. Where reference is made to codes, these are presented in italics.

4.2.1.2.2.1. **Some pupils negatively evaluated the Paws .b mindfulness programme and practices**

It was noted that *some pupils disliked learning about the human brain within the Paws .b curriculum.* For example, one pupil told the researcher that they simply did not like learning about the human brain.

- **Per18:** “To be honest, I didn’t like doing the brain things.”

  **Researcher:** “You didn’t like learning about the brain?”

  **Per18:** “Yeah. I just didn’t like it.”

Furthermore, there was a more general and consistent feeling that *pupils disliked closing their eyes during Paws .b mindfulness practices.* For example, two pupils highlighted that they occasionally had to urge to open their eyes during Paws .b mindfulness practices and would have preferred to have the option to do so.
- **Ham01**: “When we’re doing things like finger breathing or FOFBOC\(^{14}\) or something, we have to keep our eyes shut and I’m just like, “I want to open them…””

**Waj03**: “That’s how I feel. That’s how I feel sometimes.”

4.2.1.2.2.2. **Class teachers questioned the impact and transferability of Paws .b**

Whilst class teachers felt that Paws .b had a variety of positive impact upon their pupils, *class teachers were unsure that positive pupil impact was solely due to Paws .b*. For example, following a discussion around pupils’ behavioural improvements following Paws .b, the experimental teacher questioned whether such improvements were solely related to Paws .b or whether other factors may have also played a role.

- **Experimental teacher**: “But then it’s hard to know if it’s (reference to pupils’ behavioural improvements) to do with other factors or whether it’s to do with mindfulness (reference to Paws .b).”

Furthermore, class teachers felt that *not all pupils used mindfulness practices outside of Paws .b lessons*. For example, the second waitlist control teacher felt that the majority of their pupils would only undertake Paws .b mindfulness practices if they were instructed to do so.

\(^{14}\) The FOFBOC mindfulness practice is an abbreviation of, ‘Feet on floor – bottom on chair’, and consists of pupils grounding themselves by placing their feet on the floor and sitting up straight by pushing their bottoms to the backs of their chairs.
- **Second waitlist control teacher:** “A lot of them (reference to the pupils)...wouldn’t necessarily venture into doing it (reference to Paws .b mindfulness practices) unless they were prompted.”

4.2.1.2.2.3. **The mindfulness teacher felt that Paws .b was not sufficiently differentiated**

A disadvantage of delivering Paws .b within the context of Harry Close Primary Academy was that *behaviour management needs prevented the mindfulness teacher from engaging fully in Paws .b mindfulness practices*, whereby the mindfulness teacher felt unable to achieve the desired 50% leading a Paws .b mindfulness practice and 50% being ‘in’ a Paws .b mindfulness practice with the pupils because of their need to use strategies during mindfulness practices to manage certain pupils’ behaviour.

- **Mindfulness teacher:** “I tried in one of the first lessons, especially doing the FOFBOC\(^{14}\), to actually sit (with the pupils) and model, so, “Look, you need to sit like I am,” but I needed that teacher tool of walking around the room and being able to stand between two pupils who were eyeballing each other, and just use my presence, which didn’t allow me to settle into any of the (Paws .b mindfulness) practices.”

4.2.1.2.2.4. **The mindfulness teacher felt that Paws .b required careful preparation**

The researcher was able to establish that *Paws .b’s requirement that mindfulness teachers be mindfulness practitioners creates a training need*. For example, upon the researcher putting this observation to the mindfulness
teacher, they agreed with the researcher and acknowledged that Paws .b does create an unavoidable training need for any staff that would like to deliver it, as the Mindfulness in School Project requires mindfulness teachers to be experienced mindfulness practitioners before they can be trained to deliver Paws .b.

- **Researcher:** “But I think herein lies a barrier (with reference to the mindfulness teacher’s suggestion that it would be ideal for pupils’ class teachers to deliver Paws .b), because you mentioned that so much of the depth of pupils’ experience of Paws .b rests upon your experience as a mindfulness practitioner, you can’t get away from that training need in that class teachers would need to be established mindfulness practitioners like yourself before you could look at getting them trained to deliver Paws .b to their pupils with the classroom.”

  **Mindfulness teacher:** “Yeah. You can’t get away from it.”

  **Researcher:** “And it seems, from what you’ve said, that if mindfulness teachers weren’t established mindfulness practitioners, Paws .b would have as much of an impact upon pupils?”

  **Mindfulness teacher:** “Yeah.”

Furthermore, the mindfulness teacher felt that *a disadvantage of Paws .b, as a discrete intervention, is that it comes and goes*, whereby they felt that the short-term nature of the Paws .b mindfulness programme raises
ethical questions, particularly for pupils who really enjoyed the intervention.

- Mindfulness teacher: “We had it (reference to Paws .b) and it was great, but we took it away, all in one go. Like that. Gone. Dead. Get on with it yourself. Which, ethically, is quite harsh. It’s cut off.”

4.2.2. **RQ3: Executive summary of findings**

In answer to RQ3(a), there were three aspects of the Paws .b mindfulness programme that were perceived to be beneficial by experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher:

- The Paws .b mindfulness programme was positively evaluated both by those who interfaced with the programme directly (i.e., the experimental and waitlist control pupils, and the mindfulness teacher), and by those who did not interface with the programme directly (i.e., the experimental teacher and waitlist control teachers);

- The Paws .b mindfulness programme facilitated pupil gains. Specifically, cognitive, emotional, and behavioural gains;

- There was a positive interface between the Paws .b mindfulness programme, the mindfulness teacher, and the pupils. Specifically, Paws .b was suitable for pupils in the Year-4 age range, who were able to *catch* the experience of mindfulness and develop their mindfulness skills for future use. The mindfulness teacher had a positive experience of delivering Paws .b and developed relationships with the pupils as a result.
In answer to RQ3(b), there was two aspects of the Paws .b mindfulness programme that were perceived to be non-beneficial by the experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher:

- Aspects of the Paws .b mindfulness programme could be improved, including the Paws .b curriculum content, the Paws .b mindfulness practices, the way that Paws .b is implemented and coordinated, and the way that Paws .b is differentiated;

- The Paws .b mindfulness programme does have its disadvantages, including the notion that some pupils didn’t like Paws .b, that class teachers were unsure of the impact and transferability of Paws .b, that the mindfulness teacher felt that Paws .b was not sufficiently differentiated, and that the mindfulness teacher felt that Paws .b requires careful preparation.

4.3. **Triangulation of quantitative and qualitative data**

As summarised in Section 4.1.3., there were a number of significant quantitative effects which pertained to RQ1. Specifically:

- The Paws .b mindfulness programme had a significantly positive immediate and sustained impact upon experimental pupils’ suppressing and sustaining attention skills, as evidenced by the significant intervention effect, and the significant 14-week follow-up effect, observed within the Attention Checklist (Das, 2002; see Appendix 1) variable data collected from the experimental group;

- The Paws .b mindfulness programme had a significantly positive immediate and sustained impact upon all pupils’ sustaining attention skills, as evidenced by:
o The significant intervention effect, and the significant 6- to 8-week follow-up effect, observed within the Naming Total Errors Percentile Rank (NEPSY-II Inhibition subtest; Korkman, Kirk & Kemp, 2007) variable data collected from the total sample;

o The significant intervention effect observed within the Naming Total Errors Percentile Rank variable data collected from the experimental group and WCG;

o The significant 8- and 14-week follow-up effects observed within the Naming Total Errors Percentile Rank variable data collected from the experimental group;

- The Paws .b mindfulness programme had a significantly positive immediate and sustained impact upon all pupils’ suppressing attention skills, as evidenced by:

  o The significant intervention effect, and the significant 6- to 8-week follow-up effect, observed within the Inhibition Total Errors Percentile Rank (NEPSY-II Inhibition subtest; Korkman, Kirk & Kemp, 2007) variable data collected from the total sample;

  o The significant intervention effect observed within the Inhibition Total Errors Percentile Rank variable data collected from the experimental group and WCG;

  o The significant 8- and 14-week follow-up effects observed within the Inhibition Total Errors Percentile Rank variable data collected from the experimental group.

Furthermore, as discussed in Section 4.2.1.1., one of the themes which pertained to RQ3(a) was: ‘The Paws .b mindfulness programme facilitated
pupil gains’ (see Section 4.2.1.1.2.), whereby the three sub-themes were: ‘Pupils reported cognitive and emotional gains’; ‘Class teachers felt that their pupils made cognitive, emotional, and behavioural gains’; and, ‘The mindfulness teacher felt that pupils made cognitive and emotional gains’.

Thus, the extent to which the Paws .b mindfulness programme led to a quantitative improvement in pupils’ suppressing and sustaining attention skills is able to be further evidenced through the triangulation of qualitative data pertaining to the theme: ‘The Paws .b mindfulness programme facilitated pupil gains’, as pupils, their class teachers, and the mindfulness teacher all felt that Paws .b facilitated pupils making cognitive gains, particularly with regards to attention.

Upon exploring the sub-theme, ‘Pupils reported cognitive and emotional gains’, the first code referenced in Section 4.2.1.1.2.1. highlighted that pupils found Paws .b to be helpful for reducing distractibility and improving concentration, particularly in terms of Paws .b allowing pupils to practise concentrating and improving their ability to bring their concentration back when it had wandered off. Thus, pupils suggested that Paws .b allowed them to practise concentrating, which may, in turn, have improved their sustaining attention skills. Furthermore, pupils appeared to have noticed their improved suppressing attention skills in terms of being more able to bring their concentration back when it had wandered off.

Upon exploring the sub-theme, ‘Class teachers felt that their pupils made cognitive, emotional, and behavioural gains’, the first code referenced in Section 4.2.1.1.2.2. highlighted that the second waitlist control teacher felt that Paws .b helped pupils become more focused. Thus, the second waitlist control teacher suggested that Paws .b led to pupils being more focused in class, which may, from the second waitlist control teacher’s perspective, be a behavioural manifestation of pupils’ improved suppressing and sustaining attention skills.
Upon exploring the sub-theme, ‘The mindfulness teacher felt that pupils made cognitive and emotional gains’, the first code referenced in Section 4.2.1.1.2.3. highlighted that the mindfulness teacher observed that *Paws .b improved pupils’ ability to notice mind wanderings*, particularly in terms of pupils being increasing able to notice when their mind had wandered away from their breathing and onto something distracting. Thus, the mindfulness teacher suggested that *Paws .b improved pupils’ suppressing attention skills* in terms of pupils’ suppressing their attention towards distracting stimuli, as well as their sustaining attention skills in terms of pupils being increasingly able to sustain their attention on their breathing.
CHAPTER 5 – Discussion

The discussion chapter is split according to the three RQs (see Sections 3.1. and 4.2.1.). Each subsection begins with a short summary of the findings pertaining to each RQ and an explanation of patterns within the findings. The implications of the findings pertaining to each RQ will then be discussed, with particular attention paid to:

- The relationship between the findings and the pre-existing literature reviewed in Section 2.;
- The implications of the findings for schools and educational psychology practice;
- The implications of the findings for the Paws .b mindfulness programme and the Mindfulness in Schools Project.

Following this, the theoretical contribution of the present study is discussed and an overarching theoretical model of mindfulness is proposed. The discussion ends with a critique of the methodology and an account of future directions for research.

5.1. **RQ1**

As stated in Section 3.1., RQ1 was as follows:

*RQ1. To what extent does the Paws .b mindfulness programme lead to an improvement in mainstream Primary School aged pupils’ suppressing and sustaining attention skills?*

5.1.1. **Summary of findings**

For a summary of the findings pertaining to RQ1 in terms of within-condition comparisons (per condition), within-condition comparisons (per total sample), and between-condition comparisons, see Section
4.1.3. For a summary of noteworthy patterns within the RQ1 data, see Section 4.1.4.

5.1.2. **Explanation of patterns within the findings**

5.1.2.1. **First pattern within the findings**

The first pattern within the findings pertained to the within-condition comparisons (per condition). Specifically, intervention effects and follow-up effects were greater in the experimental group in comparison to the WCG. For example:

- With regards to the Attention Checklist variable, an intervention effect was observed in the experimental group, yet an inverse intervention effect was observed in the WCG;

- With regards to the Naming Total Errors Percentile Rank variable, intervention effects were observed in both the experimental group and the WCG, yet whilst the intervention effect in the experimental group was maintained at the 8- and 14-week follow-ups with large estimated effect sizes, the intervention effect in the WCG was not maintained at the 6-week follow-up;

- With regards to the Inhibition Total Errors Percentile Rank variable, intervention effects were observed in both the experimental group and the WCG, yet whilst the intervention effect in the experimental group was maintained at the 8- and 14-week follow-ups with a large estimated effect size at the 14-week follow-up, the intervention effect in the WCG was not maintained at the 6-week follow-up.

There are three possible explanations for this pattern within the findings:
1. The first waitlist control teacher was replaced by the second waitlist control teacher at Time-1, meaning that the WCG began the Paws .b mindfulness programme at the same time as experiencing a change of class teacher. Therefore, it is possible that the impact of Paws .b on waitlist control pupils’ suppressing and sustaining attention skills may have been lessened due to their need to adjust to, and build new relationships with, the second waitlist control teacher, whereas the experimental group received Paws .b having already adjusted to, and built relationships with, the experimental teacher during the first two half terms of the 2014/15 academic year.

In support of this possible explanation, during the semi-structured interview with the waitlist control teachers, the researcher noted in their diary that the second waitlist control teacher made a number of comments which suggested that there had been a particularly salient adjustment period when they began teaching the WCG. For example, the second waitlist control teacher pre-empted that the change of class teacher in the WCG may have an effect on the impact of Paws .b and stated that the WCG were “so much more used” to the first waitlist control teacher. The second waitlist control teacher also stated that the WCG “pushed boundaries” and were “unsettled” following their change of class teacher;

2. A critique of the present methodology (see Section 5.5.) is that the researcher did not match the experimental group and the WCG on gender or core personality traits (e.g., agreeableness/conscientiousness/openness to experience; Norman, 1963). Therefore, it is possible that the greater proportion of males in the experimental group resulted in Paws .b having a greater impact upon experimental pupils’ suppressing and sustaining
attention skills. Likewise, it is possible that core personality differences existed between the experimental pupils and waitlist control pupils which resulted in Paws .b having a greater impact upon experimental pupils’ suppressing and sustaining attention skills (e.g., due to them being more agreeable/ conscientious/ open towards Paws .b than waitlist control pupils);

3. A further critique of the present methodology (see Section 5.5.) is that the researcher did not measure pupils’ mindfulness skills and was thus unable to carry out mediation analyses and ascertain whether pupils’ mindfulness skills mediated the relationship between Paws .b and pupils’ suppressing and sustaining attention skills, relative to the first three stages of the theoretical model of the present study (see Figure 16), i.e., Paws .b mindfulness programme ↑ pupils’ mindfulness skills ↑ pupils’ suppressing and sustaining attention skills (see Section 5.4. for further discussion of the theoretical model of the present study).

For example, pupils’ mindfulness skills could have been measured using a self-report such as the Freiburg Mindfulness Inventory (Walach, Buchheld, Buttenmüller, Kleinknecht & Schmidt, 2006). This would then have allowed the researcher to assess whether the greater impact of Paws .b on experimental pupils’ suppressing and sustaining attention skills was mediated by their more well-developed mindfulness skills in comparison to waitlist control pupils.

5.1.2.2. Second pattern within the findings

The second pattern within the findings again pertained to the within-condition comparisons (per condition). Specifically, follow-up effects within the experimental group were stronger than intervention effects within the experimental group. For example:
With regards to the Attention Checklist variable, whilst an intervention effect was observed in the experimental group, a follow-up effect with a large estimated effect size was observed at the 14-week follow-up;

With regards to the Naming Total Errors Percentile Rank variable, whilst an intervention effect was observed in the experimental group, follow-up effects with large estimated effect sizes were observed at the 8- and 14-week follow-ups;

With regards to the Inhibition Total Errors Percentile Rank variable, whilst an intervention effect was observed in the experimental group, a follow-up effect with a large estimated effect size was observed at the 14-week follow-up.

A possible explanation for this pattern within the findings again relates to the first three stages of the theoretical model of the present study (see Figure 16), i.e., *Paws .b mindfulness programme* ↑ *pupils’ mindfulness skills* ↑ *pupils’ suppressing and sustaining attention skills* (see Section 5.4. for further discussion of the theoretical model of the present study). With regards to Haring and Eaton’s (1978) instructional hierarchy of skill development, it can be proposed that Paws .b would allow pupils to move through the first three stages of the instructional hierarchy (i.e., acquisition; fluency; and, maintenance). Specifically, Paws .b taught pupils a number of mindfulness practices and thus enabled them to acquire a number of mindfulness skills. Pupils were then repeatedly exposed to the same mindfulness practices throughout Paws .b, thus enabling their mindfulness skills to become more fluent. Furthermore, as Paws .b included six weekly 1-hour lessons, it appeared that pupils were able to maintain their mindfulness skills over time.
Therefore, when post-intervention variable data were collected from the experimental group at Time-1, this potentially constituted an assessment of the impact of experimental pupils’ maintained mindfulness skills on their suppressing and sustaining attention skills. This may well account for why, in terms of the Attention Checklist/ Naming Total Errors Percentile Rank variable/ Inhibition Total Errors Percentile Rank variables, there were significant intervention effects within the experimental group at Time-1 without the presence of large estimated effect sizes.

However, when follow-up variable data were collected from the experimental group at Time-2 and Time-3, this constituted an assessment of the impact of experimental pupils’ generalised and adapted mindfulness skills on their suppressing and sustaining attention skills. Specifically, experimental pupils were able to generalise their mindfulness skills by applying them under different conditions and in novel situations, and adapt their mindfulness skills by tweaking them to suit their everyday lives outside of the classroom, over a period of 8- to 14-weeks. In terms of the Attention Checklist/ Naming Total Errors Percentile Rank/ Inhibition Total Errors Percentile Rank variables, this probably accounts for significant follow-up effects with large estimated effect sizes within the experimental group at Time-2 and/ or Time-3.

Nonetheless, Hawthorne effects may explain the changes in experimental pupils’ Attention Checklist scores as the experimental teacher knew when their pupils were receiving Paws .b, which may have biased their ratings. However, as the NEPSY-II in a norm-referenced and standardised neuropsychological assessment battery, the researcher feels that it would be unlikely that Hawthorne effects could explain the changes in experimental pupils’ Naming Total Errors Percentile Rank variable scores and their Inhibition Total Errors Percentile Rank variable scores.
5.1.3. Implications of findings: Pre-existing literature

Relative to Section 2.6.2.1., the researcher and others (see Bishop et al., 2004; Lutz et al., 2008; Ruocco & Direkoglu, 2013) asserted that mindfulness is a skill that not only involves metacognition (see Holas & Jankowski, 2013; the Melbourne Academic Mindfulness Interest Group; MAMIG, 2006), but a skill that involves suppressing and sustaining attention. This assertion has been supported by RQ1 findings, as intervention and follow-up effects were observed within the data generated by the Attention Checklist variable (which is sensitive to suppressing and sustaining attention; see Section 3.5.1.1.1.), the Naming Total Errors Percentile Rank Variable (which is sensitive to sustaining attention; see Section 3.5.1.1.2.), and the Inhibition Total Errors Percentile Rank variable (which is sensitive to suppressing attention; see Section 3.5.1.1.2.), following pupils’ exposure to the Paws .b mindfulness programme.

The findings of the present study, relative to RQ1, both replicated, and extended, previous child and adolescent literature citing the positive effects of mindfulness on attentional functioning (see Section 2.7.2.).

When compared to the ‘closest match’ study by Napoli et al. (2005), the present study, much like Napoli et al. (2005), used a RCT design to randomly allocate mainstream Primary School pupils aged between 8- and 9-years to receive a manualised mindfulness programme (i.e., Paws .b) in school, which was delivered by an experienced mindfulness practitioner (i.e., the mindfulness teacher) who had been trained to deliver Paws .b by an experienced third party (i.e., the Mindfulness in Schools Project). Furthermore, pupils’ attentional functioning was assessed pre- and post-intervention using teacher-reported measures of attention (i.e., the Attention Checklist) and an objective measure of attention (i.e., the NEPSY Inhibition subtest). In terms of between-condition comparisons, the present study, like Napoli et al. (2005), observed that experimental pupils had significantly better post-intervention attention scores when compared to controls according to the
teacher-reported measure of attention (i.e., the Attention Checklist variable) and the objective measure of attention (i.e., the Naming Total Errors Percentile Rank variable). Hence, the present study appeared to replicate Napoli et al.’s (2005) findings.

Further to this, the present study extended Napoli et al.’s (2005) findings by:

- Replicating their findings within the UK context;
- Replicating their findings using a less intensive 6-hour mindfulness programme delivered weekly across 6-weeks (i.e., Paws .b) as opposed to their more intensive 9-hour mindfulness programme (i.e., the AAP) delivered fortnightly across 24-weeks;
- Using a teacher-reported measure of attention that was tailored towards observable attention behaviours that pupils display in the classroom (i.e., the Attention Checklist) as opposed to ADHD symptoms (i.e., the ACTeRS);
- Using an intervention cross-lag (similar to Semple et al., 2010) in order to allow for a more ethical waitlist control group than Napoli et al.’s (2005) less ethical comparative control group;
- Conducting baseline between-condition comparisons to ensure that no differences exited between experimental and control pupils before they received Paws .b;
- Conducting within-condition comparisons;
- Conducting follow-up measurements at 6- to 8-weeks and 14-weeks post-intervention (similar to Semple et al., 2010);
• Including academic proxy measures;

• Including qualitative data (specifically, pupil and teacher voice data).

However, there are several methodological limitations shared by the present study and Napoli et al. (2005). Specifically, both Napoli et al. (2005) and the present study did not include parent-reported attention measures. Furthermore, the present study, like Napoli et al. (2005), is open to Hawthorne effects, in that the experimental teacher and the waitlist control teachers knew when pupils were receiving Paws .b, which may have biased their Attention Checklist ratings.

There is also a methodological limitation within the present study that did not apply to Napoli et al. (2005). Specifically, whilst Napoli et al. (2005) had a large sample of 194 mainstream pupils, the present study had a meagre sample of 30 mainstream Primary School aged pupils, hence why Napoli et al. (2005) had sufficient statistical power to quote medium effect sizes, whereas the present study only had sufficient statistical power to quote large effect sizes (see Section 3.6.1.4.).

5.1.4. Implications of findings: Schools

The findings of the present study, relative to RQ1, have strong implications for schools. As discussed in Section 2.3., there are two broad reasons why schools take a keen interest in the attentional functioning of their pupils.

Firstly, the prevalence of attentional difficulties amongst children and young people in the UK is such that every school is likely to have a small but significant number of children and young people who have an identifiable attentional difficulty, such as ADHD (see Ford et al., 2003; Lara et al., 2009). These children and young people will require long-term additional support within school, not only to support their
attentional needs, but to mitigate the associations that exist between attentional difficulties and a number of negative outcomes, including: peer rejection, low self-esteem, social anxiety, stress, arrest, and imprisonment (see Elkins et al., 2011; Klassen et al., 2004; Mannuzza et al., 2008).

Secondly, impoverished environmental input within the classroom can prevent all children and young people from realising their underlying attentional potential (see Ruff & Rothbart, 1886; Schweizer et al., 2005), which, in turn, may compromise their cognitive development and academic progress (see Bledsoe et al., 2010; Breslau et al., 2010; Rabiner et al., 2003; Stage et al., 2003; Steele et al., 2012).

Hence, much in the same way that most schools support their pupils’ literacy and numeracy development using manualised and evidence-based intervention programmes, it can be suggested that schools would welcome the publication of an evidence-based intervention programme which could support the attentional development of all their pupils, including those with attentional difficulties. The view that a mindfulness-based intervention programme could provide schools with a means of achieving this is by no mean new (see Lau, 2009), and whilst there are a growing number of studies citing the positive impact of mindfulness-based interventions on children and young people’s attentional functioning (see Section 2.7.2.), the present study, albeit small-scale, has confirmed that Paws .b (i.e., a low-intensity, manualised mindfulness programme) does significantly improve mainstream Year-4 pupils’ suppressing and sustaining attention skills within the UK context. The present study is also able to extend Jones’ (2011) line of argument: mindfulness has as much of a place within the education system as exams, not only because it can be taught in lessons and prepares pupils for life outside of school, but because it improves pupils attentional functioning.
5.1.5. **Implications of findings: Educational psychology practice**

With regards to the role of the EP, Fallon, Woods and Rooney (2010) state that EPs are *‘fundamentally scientist practitioners who utilise, for the benefit of children and young people, psychological skills, knowledge and understanding through the functions of consultation, assessment, intervention, research and training, at organisational, group or individual level across educational, community and care settings, with a variety of role partners’* (p. 4). Relative to this, it can be suggested that the findings from the present study could potentially impact upon the role of the EP at the individual, group, and organisational levels – something that Davis (2012) said was yet to happen at the time of his research.

At the individual level, the EP functions of consultation and assessment are likely to reveal problem situations pertaining to the attentional difficulties of individual children. Whilst EPs will be accustomed to conventional approaches towards supporting individual children’s attentional difficulties (e.g., environmental adjustment; curriculum differentiation; attention training programmes/ activities), the present study suggests that mindfulness-based interventions may also be a fruitful avenue for exploration and thus may become part of the EP’s ‘toolkit’ regarding individual children’s attentional difficulties.

However, because of the temporal and monetary investment required by schools in order to facilitate key members of staff becoming mindfulness practitioners before being trained how to deliver a mindfulness-based intervention, such as Paws .b, it is the opinion of the researcher that the findings of the present study are most likely to impact upon the role of the EP at the group and organisational levels.

Whilst the EP functions of consultation and assessment are likely to reveal problem situations pertaining to the attentional difficulties of individual children, EPs’ knowledge and understanding of the importance of preventative work within schools, and their close working relationships predominantly with school SENCOs, is perhaps more likely
to lead EPs towards identifying (through consultation and/or assessment) year groups/classes/specific groups that may benefit from the introduction of a mindfulness-based intervention such as Paws .b. EPs may then be more well-placed to utilise their consultation skills to explore the investment that school could potentially make in progressing towards training key members to deliver a mindfulness-based intervention to whole groups of pupils. This process would potentially open up avenues for the EP to work at the organisational level to facilitate schools’ provision of a mindfulness-based intervention, which could include providing training for school staff on mindfulness and pupils’ attentional development, as well as research to evaluate the impact of mindfulness on key groups of pupils.

5.1.6. **Implications of findings: Paws .b mindfulness programme and Mindfulness in Schools Project**

The findings of the present study have many implications for the Paws .b mindfulness programme and the Mindfulness in Schools Project. The present study was the first empirical evaluation of the Paws .b mindfulness programme, which had been piloted and evaluated in North Wales, albeit in a methodologically inexact manner. Therefore, as the present study evaluated the impact of the Paws .b mindfulness programme on mainstream Year-4 pupils’ suppressing and sustaining attention skills within the UK context in a methodologically rigorous manner, the Mindfulness in School Project will be able to reliably claim that Paws .b can improve mainstream Year-4 pupils suppressing and sustaining attention skills (i.e., that Paws .b is an evidence-based mindfulness intervention).

The present study also goes some way towards supporting efficacy and fidelity of the Paws .b training offered by the Mindfulness in School Project to would be mindfulness teachers, as the mindfulness teacher within the present study had only ever developed their own mindfulness practice before being trained to deliver Paws .b by the mindfulness in schools project. Therefore, the findings of the present study not only
provide evidence of the impact of the Paws .b mindfulness programme on mainstream Year-4 pupils’ suppressing and sustaining attention skills, but the impact of the Paws .b training offered by the Mindfulness in Schools Project.

However, as the present study focused solely on mainstream Year-4 pupils at Harry Close Primary Academy, it would not be feasible for the Mindfulness in Schools Project to claim that Paws .b would have equal impact in other year groups and in other school contexts. Hence, there is a need for future research to replicate the findings of the present study in different year groups within the UK context.

5.2. **RQ2**

As stated in Section 3.1., RQ2 was as follows:

*RQ2. To what extent does the Paws .b mindfulness programme lead to an improvement in mainstream Primary School aged pupils’ academic proxy measures?*

5.2.1. **Summary of findings**

As discussed in Section 4.1.6., there were no findings which pertained to RQ2 due to the lack of intervention effects within the Quality of Work Produced in Class variable and the presence of maturation effects within the Literacy and Numeracy variables.

5.2.2. **Explanation of patterns within the findings**

5.2.2.1. **First pattern within the findings**

The first pattern within the findings pertained to the lack of intervention and follow-up effects within the Quality of Work Produced in Class variable. There are five possible explanations of this pattern within the findings:
1. A critique of the present methodology is that the Quality of Work Produced in class questionnaire was created by the researcher for the purpose of the present study. Whilst the Quality of Work Produced in Class questionnaire was high in face validity in terms of asking the experimental teacher/waitlist control teachers to rate their pupils’ work quality on a weekly basis using familiar descriptors, its construct validity and reliability were left open to question. Specifically, the fact that the Quality of Work Produced in Class questionnaire consisted of one question meant that the researcher was unable to establish its construct validity using an appropriate method of factor analysis (see Field, 2005, p. 629-666) and was unable to establish its reliability using Cronbach’s alpha (Field, 2005, p. 666-677).

In contrast, construct validity of the Attention Checklist (Das, 2002; see Appendix 1) was established using principal component analysis as one method of factor analysis and reliability was established using Cronbach’s alpha. This may then explain why intervention and follow-up effects were observed within the Attention Checklist variable, but not within the Quality of Work Produced in Class variable, in that the Attention Checklist has been proved to be a valid and reliable measure of attention, whereas the Quality of Work Produced in Class was not proved to be a valid and reliable measure of pupils’ work quality.

2. A critique of the present methodology (see Section 5.5.) is that the researcher did not measure pupils’ metacognitive skills and was thus unable to carry out mediation analyses and ascertain whether pupils’ metacognitive skills mediated the relationship (or lack thereof) between pupils’ suppressing and sustaining attention skills and their academic progress, relative to the final three stages of the theoretical model of the present study (see
Figure 16, i.e., *pupils’ suppressing and sustaining attention skills ↗ pupils’ metacognitive skills ↗ pupils’ academic progress.*

For example, pupils’ metacognitive skills could have been measured using a self-report such as the Junior Metacognitive Awareness Inventory (Sperling, Howard, Miller & Murphy, 2002). This would then have allowed the researcher to assess where the point of breakdown was in the theoretical model of the present study (see Figure 16), given that Paws .b did not impact upon pupils’ Quality of Work Produced in Class. Specifically, there could have been two points of breakdown:

- Firstly, pupils’ greater suppressing and sustaining attention skills, as a result of Paws .b, may not have led to greater metacognitive skills, hence why Paws .b did not impact upon pupils’ Quality of Work Produced in Class;

- Secondly, pupils’ greater suppressing and sustaining attention skills, as a result of Paws .b may, have led to greater metacognitive skills, but pupils’ greater metacognitive skills may not have improved pupils’ Quality of Work Produced in Class, hence why Paws .b did not impact upon pupils’ Quality of Work Produced in Class.

3. A critique of the present methodology is its small sample size, which meant that there was only sufficient statistical power to detect large effect sizes (see Section 3.6.1.4.). Therefore, upon seeking to ascertain whether Paws .b improves pupils’ academic proxy measures (e.g., their Quality of Work Produced in Class), it is likely that a much larger sample would be required. Whilst large effect sizes were observed within the present study
regarding the impact of Paws .b on pupil’s suppressing and sustaining attention skills, because the link between Paws .b and pupils’ academic progress is somewhat distal (see Figure 16), it is likely that Paws .b may only have a small or medium effect on pupils academic proxy measures, whereby a sample of 85 would be required to detect a medium effect size and a sample of 783 would be required to detect a small effect size.

4. A critique of the Paws .b mindfulness programme is that it was a short intervention (i.e., 6-weeks long) and of low intensity (i.e., it consisted of six 1-hour lessons). Because of this, whilst Paws .b was of sufficient length and intensity to impact upon pupils’ suppressing and sustaining attention skills, it may not have been of sufficient length and intensity for pupils to transfer their greater suppressing and sustaining attention skills into greater metacognitive skills which could then serve to improve pupils’ academic progress;

5. The view that improving pupils’ suppressing and sustaining attention skills, and metacognitive skills, would impact on their Quality of Work Produced in Class may be somewhat reductionist, whereby suppressing and sustaining attention skills, and metacognitive skills, may be some of a plethora of skills that underpin pupils’ work quality. Hence, it is possible that the impact of Paws .b may never directly have an impact upon pupils’ Quality of Work Produced in Class.

5.2.2.2. Second pattern within the findings

The second pattern within the findings pertained to the presence of maturation effects within the Literacy and Numeracy variables. A possible explanation for this pattern within the findings relates to the experimental teacher and waitlist control teachers’ assessment roles within Harry Close Primary Academy. The Literacy and Numeracy variable data were collected by the researcher by simply
gaining access to the experimental teacher and waitlist control teachers’ literacy and numeracy assessment files, which they populated with assessment data at each of the time-points. Therefore, the Literacy and Numeracy variables were generated from assessment processes deeply engrained within the assessment policies and procedures of Harry Close Primary Academy, whereby Year-4 pupils are taught literacy and numeracy in discrete lessons on a daily basis.

Because of this, Harry Close Primary Academy, as a system, is tailored towards accelerating pupils’ progress in literacy and numeracy on a half-termly basis, hence the preponderance of maturation effects within the Literacy and Numeracy variables. Furthermore, for this reason, it was always highly unlikely that Paws .b, as a short intervention of low intensity, would be able to permeate, and lead to significant intervention/ follow-up effects within, the literacy and numeracy assessment systems within Harry Close Primary Academy.

A possible solution to this would have been for the researcher to measure pupils’ literacy and numeracy skills using a validated and reliable assessment that would be separate from Harry Close Primary Academy’s assessment systems, e.g., the Wechsler Individual Achievement Test – Second UK Edition (WIAT-IIUK; Wechsler, 2005). Whilst this would increase the likelihood of intervention/ follow-up effects being noted within academic proxy measures as a result of Paws .b, this would decrease the ecological validity of the literacy and numeracy assessment data that were collected within the present study. There is also an ethical question as to whether pupils may experience a level of distress through being exposed to an additional literacy and numeracy assessment.
5.2.3. **Implications of findings: Pre-existing literature**

In terms of the attention context (see Section 2.3.), literature suggests that impoverished environmental input within the classroom can prevent all children and young people from realising their underlying attentional potential (see Ruff & Rothbart, 1886; Schweizer et al., 2005), which, in turn, may compromise their cognitive development and academic progress (see Bledsoe et al., 2010; Breslau et al., 2010; Rabiner et al., 2003; Stage et al., 2003; Steele et al., 2012). However, the present study was unable to support this link. Whilst the Paws .b mindfulness programme had a significant impact upon pupils’ suppressing and sustaining attention skills, this impact did not, in turn, impact upon pupils’ academic proxy measures.

Nonetheless, the present study did, to a certain extent, contribute to a knowledge gap highlighted by Black et al. (2009) and Greenberg and Harris (2012), who highlighted the need to provide high-quality evidence in term of investigating the effects of mindfulness on aspects of positive functioning (i.e., academic progress). The present study also extends the findings of the ‘closest match’ study by Napoli et al. (2005) who did not measure the impact of the AAP on children’s academic proxy measures.

5.2.4. **Implications of findings: Schools**

In comparison to the implications of RQ1 findings for schools (see Section 5.1.4.), there are relatively limited implications of RQ2 findings for schools. Perhaps the only implication for schools at this stage is to frame the Paws .b mindfulness programme as an intervention which will improve their pupils’ suppressing and sustaining attention skills, but for which there is currently no evidence of impact on pupils’ literacy and numeracy skills.

5.2.5. **Implications of findings: Educational psychology practice**

In comparison to the implications of RQ1 findings for EPs (see Section 5.1.5.), there are relatively limited implications of RQ2 findings for EPs. Perhaps the only implication for EPs at this stage is to know the limits of
Paws .b in terms of it being an intervention which will improve pupils’ suppressing and sustaining attention skills, but for which there is currently no evidence of impact on pupils’ literacy and numeracy skills.

5.2.6. **Implications of findings: Paws .b mindfulness programme and Mindfulness in Schools Project**

In comparison to the implication of RQ1 findings for the Mindfulness in Schools Project (see Section 5.1.6.), there are relatively limited implications of RQ2 findings for the Mindfulness in Schools Project. Perhaps the only implication for the Mindfulness in Schools Project at this stage is to claim that Paws .b will improve pupils’ suppressing and sustaining attention skills, but for which there is currently no evidence of impact on pupils’ literacy and numeracy skills.

5.3. **RQ3**

As stated in Section 4.2.1., two research sub-questions were created to answer RQ3:

*RQ3(a). What aspects of the Paws .b mindfulness programme were perceived to be beneficial by the experimental and waitlist control pupils, the experimental teacher and waitlist control teachers, and the mindfulness teacher?*

*RQ3(b). What aspects of the Paws .b mindfulness programme were perceived to be non-beneficial by experimental and waitlist control pupils, the experimental teacher and waitlist control teachers, and the mindfulness teacher?*

5.3.1. **Summary of findings**

For a summary of the findings pertaining to RQ3(a) and RQ3(b), see section 4.2.2. As the process of TA essentially involves the detection and explanation of patterns within qualitative data (see Braun & Clarke, 2006; Section 4.2.), no further explanation of RQ3 findings will be offered here.
5.3.2. **Implications of findings: Pre-existing literature**

There are several implications of RQ3(a) findings. Firstly, the sub-theme, ‘Paws .b was well-suited to Year-4 pupils (see Section 4.2.1.1.3.3.), supports Hayes and Greco (2008) who stated that children aged 8-years or older are likely to benefit from mindfulness programmes providing that they are developmentally appropriate (i.e., that they include concrete instructions/ limited time periods for mindfulness practices; physical movement; and, a focus on discussing experiences).

Secondly, as discussed in Section 5.1.3., the findings of the present study, relative to RQ1, both replicated and extended previous child and adolescent literature citing the positive effects of mindfulness on attentional functioning (see Section 2.7.2.). Following on from this, the RQ3(a) theme, ‘The Paws .b mindfulness programme facilitated pupil gains’, also extends this literature, as pupils reported that Paws .b reduced their distractibility and mind wanderings, and improved their concentration, which was largely echoed by their class teachers and the mindfulness teacher, and which was able to be triangulated with the RQ1 data (see Section 4.3.), whereby a methodological limitation common to the child and adolescent literature reviewed in Section 2.7.2. was that they did not include qualitative data (e.g., pupil/ teacher voice data).

5.3.3. **Implications of findings: Schools**

There are several implications of RQ3(a) findings for schools. With regards to RQ3(a) findings, it is likely that schools will be highly interested in the theme, ‘The Paws .b mindfulness programme was positively evaluated’, and the sub-theme, ‘The mindfulness teacher had a positive experience of delivering Paws .b’, as schools would want to know that any prospective implementation of Paws .b would likely be met with positive evaluations from their pupils, their pupils’ class teachers, and their mindfulness teacher(s). Relative to the sub-theme, ‘Paws .b developed pupils’ mindfulness skills for future use’, it is likely that schools would be interested to know that the level to which pupils’
mindfulness skills were developed throughout the Paws .b mindfulness programme was sufficient for pupils’ class teachers and the mindfulness teacher to believe that pupils would continue to use their mindfulness skills in the future. Furthermore, relative to the sub-theme, ‘Paws ‘b helped develop teacher-pupil relationships’, it is likely that schools would welcome this notification.

With regards to RQ3(b) findings, it is possible that schools may wish to improve the Paws .b mindfulness by making beneficial adaptations (see Durlak and DuPre, 2008) and by navigating its disadvantages.

Relative to the sub-theme, ‘Pupils felt that improvements could be made to the Paws .b curriculum and mindfulness practices’, beneficial adaptation could consist of mindfulness teachers lengthening the Paws .b mindfulness practices and giving pupils the option of keeping their eyes open during/ changing their seat between Paws .b mindfulness practices.

Relative to the sub-theme, ‘Class teachers felt that improvements could be made to the implementation of Paws .b’, a beneficial adaptation could consist of embedding Paws .b more within the school by making it a whole-school intervention leading to continuous mindfulness provision.

Relative to the sub-theme, ‘The mindfulness teacher felt that the coordination and differentiation of Paws .b could be improved’, a beneficial adaptation could consist of making pupils’ class teachers their mindfulness teachers – a point which was echoed by the class teachers.

Relative to the sub-theme, ‘The mindfulness teacher felt that Paws .b required careful preparation’, the disadvantage pertaining to the training need created by Paws .b in terms of mindfulness teachers needing to be established mindfulness practitioners could be navigated by schools firstly offering staff the opportunity to attend an adult mindfulness class and thus become mindfulness practitioners before moving on to consider whether to introduce Paws .b within school. Furthermore, the disadvantages pertaining to pupil over-familiarity with their mindfulness teacher, and the challenge of this for senior members of staff, could be
navigated by only allowing classroom teachers to be trained to deliver Paws .b.

5.3.4. **Implications of findings: Educational psychology practice**

The researcher feels that RQ3(a) findings have no implications for the role of the EP. However, relative to Fallon et al.’s (2010) description of the EP role (see Section 5.1.5.), RQ3(b) findings suggest opportunities for EPs to use consultative or solution-focused skills to work at the organisational level to support school staff in making beneficial adaptations to, and navigating the disadvantages of, the Paws .b mindfulness programme (see Section 5.3.3.).

5.3.5. **Implications of findings: Paws .b mindfulness programme and Mindfulness in Schools Project**

RQ3(a) findings will undoubtedly be of interest to the Mindfulness in Schools Project, particularly because of the likely interest from schools (see Section 5.3.3.). Further to this, RQ3(b) findings could be used to improve the Paws .b mindfulness programme, particularly given that the programme is in its early stages of development and the present study was its first methodologically rigorous pilot.

Relative to the sub-theme, ‘Pupils felt that improvements could be made to the Paws .b curriculum and mindfulness practices’, the Mindfulness in Schools Project may wish to consider shortening the length of Paws .b lessons (e.g., to half-an-hour) and instructing mindfulness teachers to deliver Paws .b more frequently (e.g., twice a week). Authors of the Paws .b mindfulness programme may wish to consider including a greater variety of mindfulness practices within Paws .b so that pupils could learn more about mindfulness and thus further its positive impact.

Relative to the sub-theme, ‘The mindfulness teacher felt that the coordination and differentiation of Paws .b could be improved’, the Mindfulness in Schools Project may wish to consider differentiating Paws .b curriculum and mindfulness practices to accommodate a wider
array of academic abilities. This would allow for what the mindfulness teacher considered to be appropriate differentiation in terms of delivering Paws .b in small groups that were differentiated according to ability and delivering Paws .b to less able pupils using a pre-teaching format (i.e., in line with conventional methods of curriculum delivery). Furthermore, the mindfulness teacher felt that Paws .b could be improved by the final Paws .b lesson including more formal action planning of pupils’ future uses of mindfulness (i.e., to scaffold pupils’ future adaptation and generalisation of their mindfulness skills and to review this at a pre-determined point in the future).

5.4. **Theoretical contribution of research**

The theoretical model of the present study is diagrammatically represented in Figure 16. The researcher proposes that the Paws .b mindfulness programme improves pupils’ mindfulness skills through the direct teaching and guided repetition of core mindfulness practices. As all mindfulness practices require one to sustain attention towards being in the present moment at the same time as suppressing attention towards engaging with or evaluating cognitive and emotional experiences (see Section 2.6.2.1.), pupils’ enhanced mindfulness skills improve their suppressing and sustaining attention skills, which was confirmed by the present study (see Section 4.1.2.).

The researcher then proposes that pupils’ enhanced suppressing and sustaining attention skills improve their metacognitive skills. Further to this, it can be suggested that the direct teaching and guided repetition of core mindfulness practices within Paws .b not only teaches pupils how to sustain their attention towards the present moment and suppress their attention towards other experience, but teaches them how to monitor these cognitive processes (i.e., see the MAMIG, 2006). Holas and Jankowski’s (2013) metacognitive model of mindfulness also suggests that mindfulness training, such as Paws .b, impacts upon one’s metacognitive system promoting mindfulness through teaching one to simultaneously monitor both an object of cognition (e.g., breathing) and the associated cognitive processes (e.g., suppressing and sustaining attention; see Figure 16). Hence, because the
metacognitive dimension of mindfulness appears to rely on the monitoring of suppressing and sustaining attention, the researcher hypothesised that pupils’ metacognitive skills would develop as a result of developing their suppressing and sustaining attention skills.

Lastly, because of the widely cited association between pupils’ metacognitive skills and their academic progress (for example, see Roebers, Cimeli, Rothlisberger & Neuenschwander, 2012), the association between attention and academic progress (see Section 2.3.), and because of the present focus on the impact of Paws .b on pupils’ academic proxy measures, as well as pupils’ suppressing and sustaining attention skills, the researcher proposes that pupils’ metacognitive skills improve pupils’ academic progress.

In terms of future hypotheses that require testing, as the present study confirmed that Paws .b improves pupils’ suppressing and sustaining attention skills, it imperative to ascertain whether pupils’ mindfulness skills mediate this relationship (see Section 5.1.2.1.). Following on from this, as the present study was unable to confirm that Paws .b improves pupils’ academic progress, it is imperative to ascertain whether Paws .b improves pupils metacognitive skills as well as their suppressing and sustaining attention skills, and whether pupils’ metacognitive skills mediate the relationship (or lack thereof) between pupils’ suppressing and sustaining attention skills and their academic progress.
Figure 16. Diagrammatical representation of the theoretical model of the present study
5.5. **Critique of methodology**

The following discussion of the methodology will critique the present study in terms of its design, its sample, and its data gathering/analysis methods, as well as the Paws .b mindfulness programme itself.

5.5.1. **Critique of design**

Within the present study, the researcher chose to utilise a quasi-mixed methods RCT design with a quasi-experimental intervention cross-lag, which resulted in the experimental group having a 14-week follow-up and the WCG having a 6-week follow-up. The present study also took place within the UK context.

On reflection of the researcher’s decision to utilise a quasi-mixed methods design (see Teddlie & Tashakkori, 2009), whilst it was appropriate for the researcher to use quantitative methods to answer the confirmatory RQs (i.e., RQ1 and RQ2) and to use qualitative methods to answer the exploratory RQ (i.e., RQ3; see Onwuegbuzie and Leech, 2005), the present study is open to criticism for not integrating these data in answering the RQs (i.e., for not utilising a true mixed methods design). Nonetheless, the present study did triangulate the qualitative and quantitative data where possible (see Section 4.3.).

In relation to using a RCT design, this decision was influenced by the fact that RCTs provide high-quality evidence (see Greenberg & Harris, 2012), and have *‘considerable potency in establishing causation’* (see Cohen et al., 2008, p. 66), meaning that the present study was able to establish a clear link between the introduction of the Paws .b mindfulness programme and changes (or lack thereof) in the RQ1 and RQ2 variables. However, the present utilisation of a RCT design in a real-world setting was somewhat difficult for the researcher to negotiate with stakeholders at Harry Close Primary Academy and was difficult to implement in practice. Therefore, relative to Greenberg et al. (2004), as the present study can be considered to be an efficacy trial of the Paws .b mindfulness
programme (i.e., Paws .b was formally evaluated using a RCT design in quasi-experimental conditions). Future research could focus on replicating the findings of the present study within an effectiveness trial of Paws .b (i.e., trialling Paws .b under the independent control of a school).

Using a quasi-experimental intervention cross-lag ensured that efforts were made to mitigate possible Hawthorne effects in terms of the experimental group and the WCG receiving the same input regarding Paws .b, but at different time-points. Nonetheless, the present study was still subject to possible Hawthorne effects as the experimental teacher and the waitlist control teachers knew when their pupils were receiving Paws .b, which may have biased their ratings on the Attention Checklist (Das, 2002; see Appendix 1). However, although these possible Hawthorne effects could be overcome in future research by utilising a single-blind RCT design with an experimental group that receives Paws .b and a comparative control group that simultaneously receives a control intervention (e.g., a creative drawing intervention), the practicalities of doing so within the context of real-world research are limited. For example, regardless of the fact that pupils would receive the experimental or control intervention away from their class teachers, pupils would almost certainly talk about their experiences in front of their class teachers who would then be able to establish whether their class was the experimental or the control group, which may again lead to the same possible Hawthorne effects as identified within the present study.

On reflection of the researcher’s decision to have a 14-week follow-up within the experimental group and a 6-week follow-up within the WCG, neither follow up was long enough to meet Greenberg and Harris’ (2012) criterion for a long-term follow-up (i.e., a 6-month follow-up), thus opening the present study up to this criticism.
As the present study took place within a single context, the generalisability of the findings is restricted to the UK context. However, as the Paws .b mindfulness programme was intended for use within the UK, there is a limited extent to which the present study can be criticised for its focus on the UK context.

5.5.2. **Critique of sample**

Within the present study, the pupil sample consisted of 30 Year-4 pupils, 16 of whom were in the experimental group (n = 7 females) and 14 of whom were in the WCG (n = 8 females), as well as their class teachers (n = 3) and a mindfulness teacher (n = 1). Aside from English as an additional language status, age, and school context, no other attempts were made to match the experimental group and the WCG.

On reflection of the small sample size, there was only sufficient statistical power to infer large effect sizes (see Section 3.6.1.4.), which is a criticism of the present study as the distal link between the Paws .b mindfulness programme and pupils’ academic progress means that Paws .b is only likely to have a small or medium effect on pupils’ academic proxy measures (see Figure 16). Thus, future research could focus on replicating the present study with a much larger sample of pupils.

In terms of the non-matched sample, the experimental group had a greater proportion of males than the WCG and no attempt was made to match the two groups on core personality traits (e.g., agreeableness/conscientiousness/openness to experience; Norman, 1963). As this may explain why the Paws .b mindfulness programme had a greater impact upon experimental pupils’ suppressing and sustaining attention skills (see Section 5.1.2.1.), future research could focus on replicating the present study with a gender- and personality-matched sample.

As a single year group constituted the present sample, the generalisability of the findings is restricted to the Year-4 pupils. This, future research
could focus on replicating the present study in different year groups within the UK context.

On reflection of the class teacher sample, although participant attrition is an unavoidable aspect of real-world research, the present study is open to criticism due to the fact that the WCG experienced a change of class teacher at time-1, whereas the experimental group kept the class teacher across all four time-points. As this may explain why the Paws .b mindfulness programme had a greater impact upon experimental pupils’ suppressing and sustaining attention skills (see Section 5.1.2.1.), future research could focus on replicating the present study with the experimental group and WCG each having the same class teacher across all time-points.

Upon reflecting more generally on the real-world dimension of the present study, the researcher feels that there were a number of advantages to utilising a quasi-mixed methods RCT design with a quasi-experimental intervention cross-lag within a real-world setting (i.e., Harry Close Primary Academy), as opposed to opting for a more methodologically ideal experimental design (e.g., a Solomon three or four group design; see Cohen et al., 2008). Specifically:

- The real-world dimension of the present study allowed the researcher to develop effective working relationships with all participants within a familiar setting (i.e., Harry Close Primary Academy). This is likely to have enhanced the validity (or credibility) of the qualitative data gathering methods (i.e., the pupil FGs and the teacher semi-structured interviews) due to the researcher having built a high level of rapport with all participants in a naturalistic environment prior to seeking open and honest accounts of their experiences of Paws .b. Had the researcher opted to utilise a more methodologically rigorous experimental design, whilst they would still have been able to build effective working relationships with all participants, the researcher feels
that the development of rapport would have been somewhat hindered by the unfamiliar nature of a laboratory-type setting, which would have ultimately diminished the validity (or credibility) of the qualitative data gathering methods;

- The real-world dimension of the present study allowed the researcher to undertake an efficacy trial of the Paws .b mindfulness programme in a way that would easily lend itself to a future effectiveness trial under the control of the community or a school (see Greenberg et al., 2004). Specifically, as the present study established the efficacy of Paws .b in a real-world setting using a quasi-experimental design, a community group or school could replicate the present study under their own control using an identical or very similar methodology and have confidence that they would achieve similar findings as they too would be carrying out a piece of real-world research. However, has the researcher opted to undertake an efficacy trial of Paws .b using a more methodologically rigorous experimental design, the researcher feels that a community group or school would be less likely to undertake an effectiveness trial of Paws .b due to the experimental setting in which its efficacy was established, thus decreasing the likelihood of enhancing the evidence base for Paws .b.

Whilst the researcher does acknowledge that a Solomon three or four group design could add further potency in terms of establishing the causal effects of Paws .b on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and their academic proxy measures (i.e., in terms of establishing that the assessment procedures at each of the time-points had no impact upon the perceived intervention effects of Paws .b), the researcher does not feel that such a methodologically rigorous design would be a natural future direction for research as this would detract from the real-world context in which Paws
.b was developed, and the real-work contexts in which Paws .b was intended for use.

5.5.3. **Critique of data gathering methods**

Within the present study, whilst Paws .b was confirmed to have a significant impact upon pupils’ suppressing and sustaining attention skills (see Section 4.1.2.), Paws .b did not have a significant impact upon pupils’ academic proxy measures, whereby no intervention or follow-up effects were observed within the Quality of Work Produced in Class variable, and maturation effects were present within the Literacy and Numeracy variables (see Section 4.1.5.).

In terms of the lack of intervention and follow-up effects within the Quality of Work Produced in Class variable, and as discussed in Section 5.2.2.1., the Quality of Work Produced in Class questionnaire was created by the researcher for the purpose of the present study without first establishing construct validity and reliability. Because of this, future research could focus on replicating the present study with the use of a valid and reliable teacher-reported measure of pupils’ work quality.

On reflection of the presence of maturation effects within the Literacy and Numeracy variables, and as discussed in Section 5.2.2.2., the Literacy and Numeracy variables were generated from assessment processes deeply engrained in the assessment policies and procedures of Harry Close Primary Academy which, as a system, is tailored towards accelerating pupils’ progress in in literacy and numeracy on a half-termly basis, hence the presence of maturation effects. Because of this, future research could focus on replicating the present study with the use of a validated and reliable literacy and numeracy assessment that would be separate from a school’s assessment systems (e.g., the WIAT-II\textsuperscript{UK}; Wechsler, 2005).

Furthermore, whilst the present study gathered quantitative and qualitative data from pupils and teachers, no data were gathered from
pupils’ parents/carers. Because of this, future research could focus on replicating, and extending, the present study with the inclusion of parent-reported attention and academic proxy measures to generate quantitative data, and with the inclusion of parent semi-structured interviews/FGs to generate qualitative data.

Lastly, and with reference to Figure 16 and Sections 5.1.2.1. and 5.2.2.1., the theoretical model of the present study proposes that Paws .b improves pupils’ mindfulness skills, and that pupils’ suppressing and sustaining attention skills improve their metacognitive skills, pupils’ mindfulness and metacognitive skills were not measured within the present study. Because of this, future research could focus on replicating, and extending, the present study with the inclusion of a measure of pupils’ mindfulness skills and a measure of pupils’ metacognitive skills.

5.5.4. **Critique of data analysis methods**
As discussed in Section 3.6.1., all RQ1 and RQ2 variables were subject to within- and between-condition comparisons using non-parametric inferential statistics. However, with reference to Figure 16 and as discussed in Section 5.1.2.1. and 5.2.2.1., the present study did not measure pupils’ mindfulness and metacognitive skills, and was thus unable to ascertain whether the relationship between Paws .b and pupils’ suppressing and sustaining attention skills was mediated by pupils’ mindfulness skills, and unable to ascertain whether pupils’ metacognitive skills mediated the relationship (or lack thereof) between pupils’ suppressing and sustaining attention skills and pupils’ academic proxy measures. Because of this, future research could focus on replicating, and extending, the findings of the present study by conducting a path analysis of the theoretical model of the present study (see Figure 16), e.g., using MANOVA or hierarchical multiple regression analysis, providing that data are parametric, as well as analysis of mediating variables where appropriate.
5.5.5. **Critique of Paws .b mindfulness programme**

As discussed in Section 5.2.2.1., the Paws .b mindfulness programme is a short intervention of low intensity. Whilst it has been advantageous for the present study to replicate the findings of the ‘closest match’ study by Napoli et al. (2005) with a shorter and less intensive mindfulness programme, Napoli et al. (2005) concluded that ‘the facilitator should keep in mind that repetition of practice is key to actually developing mindfulness [and a] consistent series of 8-10 classes is needed for a basic development of practice’ (p. 116), whilst Carmody and Baer (2009) found no significant correlation between length of intervention and outcomes in clinical and non-clinical adult groups who had received Mindfulness-Based Stress Reduction (MBSR) to help treat psychological distress. However, future research could focus on comparing Paws .b as a short intervention of low intensity to a longer and more intense mindfulness intervention to investigate the effects of programme length and intensity on outcome variables.

5.6. **Future directions for research**

Having critically evaluated the present study, the researcher identified six future directions for research: to replicate the present study and extend its findings making methodological adjustments; to compare the impact of Paws .b and the impact of a longer, more intensive mindfulness programme; to compare the impact of Paws .b and other forms of attention state training; to move away from the present efficacy trial of Paws .b towards an effectiveness trial of Paws .b; to replicate the present study using a children who belong to clinical groups (e.g., those with ADHD); and, to observe the impact of Paws .b on pupils at a neural level using fMRI/MRI.

5.6.1. **Future direction one**

Because of the various methodological criticisms of the present study, a future direction in research would be to replicate the present study and extend its findings by making appropriate methodological adjustments. As discussed above (see Section 5.5.), the following methodological criticisms would need to be addressed:
• Include a measure of pupils’ mindfulness skills (e.g., a self-report such as the Freiburg Mindfulness Inventory; Walach et al., 2006);

• Include a measure of pupils’ metacognitive skills (e.g., using a self-report such as the Junior Metacognitive Awareness Inventory; Sperling et al., 2002);

• Use a valid and reliable measure of pupils’ work quality;

• Use a valid and reliable measure of pupils’ literacy and numeracy skills that is separate from a school’s assessment systems (e.g., the WIAT-IIUK; Wechsler, 2005);

• Include a long-term follow-up of 6-months in both the experimental group and the WCG;

• Include a larger sample of ≥ 85 pupils so as to be able to infer medium effect sizes (see Section 3.6.1.4.);

• Include a number of different year groups within the sample;

• Match pupils belonging to the experimental group and the WCG in terms of English as an additional language status, age, school context, gender, and core personality traits (see Norman, 1963);

• Ensure that pupils’ class teachers remain constant across all time-points;

• Include a path analysis of the theoretical model of the present study (see Figure 16), e.g., using MANOVA or hierarchical multiple regression analysis, and analyse mediating variables where appropriate.
5.6.2. **Future direction two**

Relative to Napoli et al.'s (2005) suggestion (see Section 5.5.5.), there is a possibility that the impact of Paws .b may be overshadowed by a longer and more intensive mindfulness intervention, although Carmody and Baer (2009) found no evidence of this in clinical and non-clinical groups of adults. Because of this, a future direction in research would be to compare the impact of Paws .b and the impact of a longer, more intensive mindfulness programme on pupils' suppressing and sustaining attention skills, and academic proxy measures, to investigate the effects of intervention intensity and length.

5.6.3. **Future direction three**

Relative to the ‘programme uniqueness’ aspect of fidelity (see Durlak and DuPre, 2008), a future direction in research would be to compare the impact of Paws .b and other forms of attention state training on pupils’ suppressing and sustaining attention skills, and academic proxy measures, to investigate whether the effects of Paws .b as observed within the present study are unique to mindfulness or whether they may be replicated using other forms of attention state training (see Section 2.4.).

5.6.4. **Future direction four**

Relative to Greenberg et al. (2004), as the present study can be considered to be an efficacy trial of the Paws .b mindfulness programme (i.e., Paws .b was formally evaluated using a RCT design in quasi-experimental conditions), a future direction in research would be to focus on replicating the findings of the present study within an effectiveness trial of Paws .b (i.e., trialling Paws .b under the independent control of a school).

5.6.5. **Future direction five**

Because the impact of mindfulness-based interventions on children and young people belonging to clinical groups such as ADHD is widely cited
(see Section 2.7.2.2.), a future direction of research would be to investigate whether the impact of Paws .b on pupils’ suppressing and sustaining attention skills observed within the present study can be replicated using a sample of children and young people who have ADHD.

5.6.6. **Future direction six**

Because of the widely observed impact of mindfulness-based interventions on adults neural functioning according to fMRI⁵ (see Section 2.8.1.) and MRI¹⁰ (see Section 2.8.2.) data, a future direction in research would be to observe the impact of the Paws .b mindfulness programme on the neural functioning of children and adolescents.
CHAPTER 6 – Conclusion

To conclude, both the researcher’s involvement and interest in attention, and their Assignment 1 pilot study, acted as the genesis to the present study where it was the researcher’s desire to explore a means of improving mainstream Primary School aged pupils’ suppressing and sustaining attention skills. The researcher was also led to theorise that improving pupils’ suppressing and sustaining attention skills may also transfer to improved academic progress. Because of the dichotomy that exists between methods of attentional improvement, the researcher chose to focus on attention state training as opposed to attention training and was led to focus specifically on mindfulness over other forms of meditation due to the preponderance of mindfulness within the researcher’s place of employment as a trainee EP. Fortuitously for the researcher, Harry Close Primary Academy presented a perfect opportunity to evaluate the impact of the Paws .b mindfulness programme due to its freestanding decision to introduce Paws .b to the Year-4 curriculum – a 6-hour manualised mindfulness intervention to be delivered weekly.

The systematic review of mindfulness literature revealed a healthy number of studies pertaining to cognitive models of mindfulness, the use of mindfulness within education and Educational Psychology, as well as the impact of mindfulness on the attentional functioning of adults and children and adolescents in a variety of contexts and settings, both at the behavioural and neural levels. However, a knowledge gap was identified within the literature which delineated the need for methodologically rigorous evaluations of the impact of mindfulness interventions on mainstream Primary School aged pupils’ attention and academic progress within the UK context, which was duly translated into the aim of the present study. Specifically, to evaluate the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils’ suppressing and sustaining attention skills, and their academic proxy measures, within the UK context, to ascertain pupil and teacher views about the usefulness of Paws .b. Because of the breadth of the aim, it was necessary for the research to form three RQs.
A quasi-mixed methods RCT design with a quasi-experimental intervention cross-lag was constructed in order to answer the three RQs and achieve the aim of the present study in a methodologically rigorous manner. The results of the present study demonstrated that the 6-hour Paws .b mindfulness programme was sufficient to improve pupils’ suppressing and sustaining attention skills according to significant intervention and follow-up effects being observed within the quantitative attention data collected from both the experimental group and the WCG. There were also positive and critically constructive evaluative themes identified within the qualitative data. However, no significant intervention or follow-up effects were observed within the quantitative academic proxy measures data.

As with all real-world research, the present study was not without critique. Nonetheless, the present study acted as a real-world efficacy trial of the Paws .b mindfulness programme within its intended UK context and thus adds to current literature. The present study was also able to highlight several future directions for research, which the researcher would encourage others to undertake.
References


Breslau, N., Breslau, J., Peterson, E., Miller, E., Lucia, V. C., Bohnert, K., & Nigg, J. (2010). Change in teachers’ ratings of attention problems and subsequent
change in academic achievement: a prospective analysis. *Psychological Medicine, 40*, 159-166.


Ruocco, A. C., & Direkoglu, E. (2013). Delineating the contributions of sustained attention and working memory to individual differences in mindfulness.


### Appendix 1 – Attention Checklist (Das, 2002)

#### Attention Checklist with Key and Factor Loadings

<table>
<thead>
<tr>
<th>Observation</th>
<th>Not at All</th>
<th>Just a Little</th>
<th>Pretty Much</th>
<th>Very Much</th>
<th>Factor I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does the child have a short attention span?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.90</td>
</tr>
<tr>
<td>2. Does the child appear detached from class activities?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.74</td>
</tr>
<tr>
<td>3. Does the child accurately heed directions?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0.72</td>
</tr>
<tr>
<td>4. Does the child daydream in class?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.72</td>
</tr>
<tr>
<td>5. Does the child have trouble concentrating?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.89</td>
</tr>
<tr>
<td>6. Does the child stay with one activity long enough to complete it?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>7. Does the child work independently?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0.87</td>
</tr>
<tr>
<td>8. Is the child easily distracted?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.86</td>
</tr>
<tr>
<td>9. Is the child able to concentrate on a task until completed?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0.88</td>
</tr>
<tr>
<td>10. Does the child listen attentively?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0.90</td>
</tr>
<tr>
<td>11. Does the child become easily engrossed in an activity?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0.85</td>
</tr>
<tr>
<td>12. Does the child disregard some or all directions?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.84</td>
</tr>
</tbody>
</table>

**Note:** Copyright for the Checklist held by J.P. Das. Instructions read: “Listed below are questions about the child’s behaviour. Place a check mark in the column which best describes this child. Answer all items. (Neither the key nor the factor loading is shown to the rater.) See columns above for response alternatives”. The principal component analysis of ratings on the Checklist yielded only one factor as desired, with an eigenvalue of 8.48, explaining 70.7% of the variance. All items had significant loadings on this single factor, ranging from 0.72 to 0.90 (Das & Melnyk, 1992).
Appendix 2 – Quality of Work Produced in Class questionnaire

Class teacher name: __________________________________________

Pupil name: __________________________________________

The quality of this pupil’s work was assessed throughout which assessment period (please tick one):

- November ‘13 to December ‘13 half term —
- January ’14 to February ’14 half term —
- February ’14 to April ’14 half term —
- April ’14 to June ’14 half term —

The quality of this pupil’s work throughout the abovementioned assessment period was generally (please place a tick in one box):

<table>
<thead>
<tr>
<th></th>
<th>Outstanding</th>
<th>Good</th>
<th>Satisfactory</th>
<th>In need of improvement</th>
<th>Inadequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Week 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Week 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Many thanks for your time,
[researcher].
Appendix 3 – Pupils’ National Curriculum levels of progress (DfE, 2013)

Class teacher name: __________________________________________________________

Pupil name: ________________________________________________________________

This pupil’s progress was last assessed at the end of which assessment period
(please tick one):

- November ’13 to December ’13 half term☐
- January ’14 to February ’14 half term☐
- February ’14 to April ’14 half term☐
- April ’14 to June ’14 half term☐

<table>
<thead>
<tr>
<th>How many National Curriculum sub-level descriptors has the pupil achieved in total in literacy?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is the pupil’s National Curriculum level and sub-level of progress in numeracy?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
Appendix 4 – FG topic guide

Introduction
- Explain the purpose of the focus group;
- Assure confidentiality;
- Explain audio recording technology and transcription protocol;
- Ask for consent to record focus group.

Warm up
- Imagine you were talking to a friend at another school who had never heard of Paws .b. What would you tell them about Paws .b?

Main body
- I’m going to give each of you a face chart to see how much you liked Paws .b. Don’t look at each other’s answers. If you liked Paws .b, put a tick in the box above the happy face; if you thought Paws .b was okay, put a tick in the box above the blank face; if you didn’t like Paws .b, put a tick in the box above the sad face.

- If you ticked the happy face, why did you like Paws .b?
  o Was there anything that you didn’t like about Paws .b?

- If you ticked the blank face, why did you think Paws .b was just okay?
  o Was there anything that you liked about Paws .b?
  o Was there anything that you didn’t like about Paws .b?

- If you ticked the sad face, why didn’t you like Paws .b?
  o Was there anything that you did like about Paws .b?

- If another school was thinking about using Paws .b, what would you tell the school about Paws .b?

Cool off
- Is there anything about Paws .b that could be improved?
- Is there anything else that you would like to say about Paws .b?

Closure
- Thanks and goodbye.
Did you like Paws .b? 
Please put a tick above one face.

I didn’t like Paws .b

Paws .b was okay

I liked Paws .b
Appendix 5 – Semi-structured interview schedule

Introduction
- Explain the purpose of the interview;
- Assure confidentiality;
- Explain audio recording technology and transcription protocol;
- Ask for consent to record interview.

Warm up
- How do you think the Paws .b mindfulness programme went?

Main body
- In what ways do you feel that the Paws .b mindfulness programme helped your pupils?
  - Can you give any examples of how the Paws .b mindfulness programme helped your pupils?
- In what ways do you feel that the Paws .b mindfulness programme supported your teaching?
  - Can you give any examples of how the Paws .b mindfulness programme supported your teaching?
- Has the Paws .b mindfulness programme caused any problems for your pupils?
- Has the Paws .b mindfulness programme caused any problems for your teaching?

Cool off
- Is there anything else that you would like to feedback about your experience of the Paws .b mindfulness programme?
- Do you think the Paws .b mindfulness programme is something that the school should run again?
  - Why?

Closure
- Thanks and goodbye.
Appendix 6 – Diagrammatic representation of data gathering methods and types of comparison

**Key**

*M* = Measurement occasions where the following quantitative data were collected: Attention Checklist; NEPSY-II Inhibition subtest; Quality of Work Produced in Class; Literacy and Numeracy

*X* = Paws .b mindfulness training programme

*FG & SSI* = Pupil FGs (see Appendix 5) and teacher semi-structured interviews (SSI; see Appendix 6) where the qualitative data were collected

<table>
<thead>
<tr>
<th>Experimental group</th>
<th>Baseline</th>
<th>Time-1</th>
<th>Time-2</th>
<th>Time-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>WCG</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M1</td>
<td>X</td>
<td>M2</td>
<td>M3</td>
</tr>
<tr>
<td></td>
<td>M5</td>
<td></td>
<td>M6</td>
<td>M7</td>
</tr>
</tbody>
</table>

**Types of comparison: Quantitative data**

- *M1* vs. *M2* = Within-condition (per condition)
- *M2* vs. *M3* = Within-condition (per condition)
- *M3* vs. *M4* = Within-condition (per condition)
- *M5* vs. *M6* = Within-condition (per condition)
- *M6* vs. *M7* = Within-condition (per condition)
- *M7* vs. *M8* = Within-condition (per condition)
- *M1&6* vs. *M2&7* = Within-condition (per total sample)
- *M2&7* vs. *M3&8* = Within-condition (per total sample)
- *M1* vs. *M5* = Between-condition
- *M2* vs. *M6* = Between-condition
- *M3* vs. *M7* = Between-condition
- *M4* vs. *M8* = Between-condition
## Appendix 7 – Paws .b implementation check observation proforma

<table>
<thead>
<tr>
<th>Group:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paws .b lesson no.:</td>
<td>Focus of Paws .b lesson:</td>
</tr>
<tr>
<td>Mindfulness teacher:</td>
<td>No. of pupils:</td>
</tr>
</tbody>
</table>

Was the Paws .b lesson delivered in accordance with the Paws .b resources and lesson plan?

Were pupils engaged in the Paws .b lesson?

Did pupils respond well to the content of the Paws .b lesson?

Which mindfulness practices were included within the Paws .b lesson?

Did pupils respond well to the mindfulness practices within the Paws .b lesson?

Any process and/ or practice issues?

Interesting quotes:
Appendix 8: Participant information sheet – Mindfulness teacher

You are being invited to take part in a research study as part of my thesis – the research component within years two and three of the Doctorate in Educational and Child Psychology. Before you decide whether you would like to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

Who will conduct the research?
[researcher],
Doctorate in Educational and Child Psychology,
School of Education,
University of Manchester,
Oxford Road,
Manchester,
M13 9PL.

Title of the Research
Evaluating the impact of the Paws .b mindfulness programme on typically developing Primary School aged pupils’ attention and academic proxy measures.

What is the aim of the research?
I am hoping to answer the following research questions:

1. To what extent does the Paws .b mindfulness programme lead to an improvement in typically developing Primary School aged pupils’ suppressing and sustaining attention skills?

2. To what extent does the Paws .b mindfulness programme lead to an improvement in typically developing Primary School aged pupils’ academic proxy measures?

3. What aspects of the Paws .b mindfulness programme are perceived to be beneficial/ non-beneficial by typically developing Primary School aged pupils and their teachers?

Why have I been chosen?
Your Primary School forms part of the New Directions Education Trust where I am employed for 3-days per week as a Trainee Child and Educational Psychologist within the Targeted and Specialist Support Team (TaSS). Upon my application to the trust, my supervisor, Dr. Hazel Nash (Child and Educational Psychologist; Head of TaSS team), expressed an interest in supporting my thesis research within the Primary Schools belonging to the trust.

Therefore, the reason why you have been chosen to take part in my thesis research is because of your existing relationship with Dr. Hazel Nash and her interest in supporting my thesis research within your Primary School.
What would I be asked to do if I took part?
If you chose to take part in my research, you would be asked to complete an informed consent form and return it to me.

The research itself would involve you delivering Paws .b to a Year-4 class for 1-hour per week for 6-weeks in the January to February 2014 half term, followed by you delivering Paws .b to a second Year-4 class for the same length of time during the February to April 2014 half term. All time needed to deliver Paws .b will be protected in-school and will not add to your workload. This has been assured by Eric Hall (Executive Principal).

Throughout the rest of the academic year, the class teachers of the Year-4 classes that you deliver Paws .b to will be required to complete a number of short questionnaires regarding their pupils’ attention in class and the quality of their work produced in class. The research would also involve a single semi-structured interview, i.e., a friendly discussion with some set questions, with the class teachers to gather their reflections on Paws .b. Furthermore, you will also be required to provide data on pupils’ National Curriculum levels of progress within the two intervention classes at a number of time-points.

There would be no risk, pain or discomfort from your perspective.

What happens to the data collected?
The questionnaires regarding pupils would be anonymised using an arbitrary code to identify individual pupils. The questionnaires will be coded and the data would be saved on an encrypted and password-protected USB, before being statistically analysed. The audio recording from the semi-structured interview with the class teachers will be saved on an encrypted and password-protected USB, and anonymously transcribed, i.e., they would be referred to as ‘teacher 1/2’, whereby the transcript would then be subject to thematic analysis to look for recurring themes within the data. Following the completion of the research, the questionnaire data and original audio recording of the semi-structured interview would be deleted and held for no longer than necessary, in accordance with the Data Protection Act (1998).

How is confidentiality maintained?
As mentioned above, confidentiality will be maintained by referring to pupils using an arbitrary code and to the class teachers as ‘teacher 1/2’, whereby New Directions Educational Trust, and the name of your Primary School, would only be referred to using pseudonyms. Again, the questionnaire data and original audio recording of the semi-structures interview will be saved on an encrypted and password-protected USB, and following the completion of the research, will be deleted and held for no longer than necessary in accordance with the Data Protection Act (1998).

What happens if I do not want to take part or if I change my mind?
It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason and without detriment to yourself.

Will I be paid for participating in the research?
Due to the limitations of my research, you will not be paid for your participation. There will, however, be a plentiful supply of refreshments and sweet treats during the semi-structured
interview.

Furthermore, both Dr. Hazel Nash and I feel that there may be great utility in taking part in the research due to it containing an element of continuing professional development (CPD). For example, you will have first-hand experience of using teacher-friendly materials to improve your pupils' attention.

**What is the duration of the research?**
The length of the Paws .b intervention will be 6-weeks, with 1-hour of delivery per week, meaning that your total involvement across the year by delivering Paws .b to two Year-4 classes will be 12-hours.

**Where will the research be conducted?**
At your Primary School in the Year-4 class teachers’ classrooms.

**Will the outcomes of the research be published?**
It is intended that the outcomes of the research will be published in an academic journal.

**Contact for further information**
For further information about the research project, please e-mail me at researcher@postgrad.manchester.ac.uk.

**What if something goes wrong?**
If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Practice and Governance Co-ordinator by either writing to 'The Research Practice and Governance Co-ordinator, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester M13 9PL', by emailing: Research-Governance@manchester.ac.uk, or by telephoning 0161 275 7583 or 275 8093.
Evaluating the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils' attention and academic proxy measures

Appendix 9: Consent form - Mindfulness teacher

If you are happy to participate please complete and sign the consent form below

1. I confirm that I have read the attached information sheets on the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.

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

3. I agree to the use of anonymous quotes

4. I agree that any data collected may be passed to other researchers

5. I agree that any data collected may be published in anonymous form in academic books or journals.

I agree to take part in the above project

Name of participant

Date

Signature

Name of person taking consent [researcher]

Date

Signature
Appendix 10: Participant information sheet – Class teachers

You are being invited to take part in a research study as part of my thesis – the research component within years two and three of the Doctorate in Educational and Child Psychology. Before you decide whether you would like to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please ask me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

Who will conduct the research?
[researcher],
Doctorate in Educational and Child Psychology,
School of Education,
University of Manchester,
Oxford Road,
Manchester,
M13 9PL.

Title of the Research
Evaluating the impact of the Paws .b mindfulness programme on typically developing Primary School aged pupils' attention and academic proxy measures.

What is the aim of the research?
I am hoping to answer the following research questions:

1. To what extent does the Paws .b mindfulness programme lead to an improvement in typically developing Primary School aged pupils' suppressing and sustaining attention skills?

2. To what extent does the Paws .b mindfulness programme lead to an improvement in typically developing Primary School aged pupils' academic proxy measures?

3. What aspects of the Paws .b mindfulness programme are perceived to be beneficial/ non-beneficial by typically developing Primary School aged pupils and their teachers?

Why have I been chosen?
Your Primary School forms part of the New Directions Education Trust where I am employed for 3-days per week as a Trainee Child and Educational Psychologist within the Targeted and Specialist Support Team (TaSS). Upon my application to the trust, my supervisor, Dr. Hazel Nash (Child and Educational Psychologist; Head of TaSS team), expressed an interest in supporting my thesis research within the Primary Schools belonging to the trust.

Therefore, the reason why you have been chosen to take part in my thesis research is because of your existing relationship with Dr. Hazel Nash and her interest in supporting my thesis research within your Primary School.
You, along with one other Year-4 teacher within the trust, have been invited to take part in my thesis research.

What would I be asked to do if I took part?
If you chose to take part in my research, you would be asked to complete an informed consent form and return it to me.

The research itself would involve Mrs Laura Beale (Assistant Vice Principal – Inclusion) delivering the Paws .b mindfulness programme to your class for 1-hour per week for 6-weeks in either the January to February 2014 half term, or the February to April 2014 half term. You would then be required to complete a number of short questionnaires regarding your pupils’ attention in class and the quality of their work produced in class. The research would also involve a single semi-structured interview, i.e., a friendly discussion with some set questions, to gather your reflections on the Paws .b mindfulness programme. Furthermore, all time needed to complete the questionnaires and the semi-structured interview will be protected in-school and will not add to your workload. This has been assured by Eric Hall (Executive Principal).

There would be no risk, pain or discomfort from your perspective.

What happens to the data collected?
The questionnaires regarding your pupils would be anonymised using an arbitrary code to identify individual pupils. The questionnaires will be coded and the data would be saved on an encrypted and password-protected USB, before being statistically analysed. The audio recording from the semi-structured interview will be saved on an encrypted and password-protected USB, and anonymously transcribed, i.e., you would be referred to as ‘teacher 1/2’, whereby the transcript would then be subject to thematic analysis to look for recurring themes within the data. Following the completion of the research, the questionnaire data and original audio recording of the semi-structured interview would be deleted and held for no longer than necessary, in accordance with the Data Protection Act (1998).

How is confidentiality maintained?
As mentioned above, confidentiality will be maintained by referring to your pupils using an arbitrary code and to you as ‘teacher 1/2’, whereby New Directions Educational Trust, and the name of your Primary School, would only be referred to using pseudonyms. Again, the questionnaire data and original audio recording of the semi-structures interview will be saved on an encrypted and password-protected USB, and following the completion of the research, will be deleted and held for no longer than necessary in accordance with the Data Protection Act (1998).

What happens if I do not want to take part or if I change my mind?
It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time without giving a reason and without detriment to yourself.

Will I be paid for participating in the research?
Due to the limitations of my research, you will not be paid for your participation. There will,
however, be a plentiful supply of refreshments and sweet treats during the semi-structured interview.

Furthermore, both Dr. Hazel Nash and I feel that there may be great utility in taking part in the research due to it containing an element of continuing professional development (CPD).

**What is the duration of the research?**
The time it will take you to complete the quality of work produced in class questionnaire for all of your pupils, every week across the four time points, is approximately 1-hour and 10-minutes. The time it will take you to complete the attention questionnaire for all of your pupils at each of the four time points is approximately 1-hour and 30-minutes. The semi-structured interview would last for approximately 1-hour. Thus, your total involvement across the year will be no more than 4-hours.

**Where will the research be conducted?**
*At your Primary School and in your classroom.*

**Will the outcomes of the research be published?**
*It is intended that the outcomes of the research will be published in an academic journal.*

**Contact for further information**
*For further information about the research project, please e-mail me at researcher@postgrad.manchester.ac.uk.*

**What if something goes wrong?**
*If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Practice and Governance Co-ordinator by either writing to ‘The Research Practice and Governance Co-ordinator, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester M13 9PL’, by emailing: Research-Governance@manchester.ac.uk, or by telephoning 0161 275 7583 or 275 8093.*
Appendix 11: Consent form - Class teachers

If you are happy to participate please complete and sign the consent form below.

1. I confirm that I have read the attached information sheets on the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.

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

3. I agree to the use of anonymous quotes

4. I agree that any data collected may be passed to other researchers

5. I agree that any data collected may be published in anonymous form in academic books or journals.

I agree to take part in the above project

Name of participant ________________________________ Date _______________ Signature ________________________________

Name of person taking consent ________________________________ Date _______________ Signature ________________________________

[researcher]
Appendix 12: Presentation for parents/ carers

Mindfulness:
A new skill for Year-4 pupils

By researcher
(Trainee Educational and Child Psychologist, New Directions Educational Trust and The University of Manchester)
What is ‘mindfulness’?

• Mindfulness has three goals:

1. To pay attention;
2. To be in the present moment;
3. To be non-judgemental.

• To achieve these, mindfulness uses fun activities such as breathing and relaxation exercises.
Why am I researching mindfulness?

- Research suggests that mindfulness improves children’s attention skills.

- I am going to evaluate the impact of a mindfulness programme called ‘Paws .b’ on your children’s attention skills and their achievement in class.

- Paws .b will last for 1-hour per week for 6-weeks, and will be taught by [mindfulness teacher].
Why I need your help

• I need your consent to collect information about your children.

• I plan to collect information in January, February, April and June 2014.

• I plan to collect information from your child’s class teacher by using two questionnaires, and from your child themselves by carrying out a 5-minute assessment of their attention skills.
How do you give your consent?

• If you are happy for me to collect information about your child, then please collect an information sheet and a consent form.

• On the consent form, please put your initials in all five boxes and sign and date the bottom of the form.

• Please return the consent forms to your child’s class teacher.
Questions

• If you have any questions, please feel free to speak to me or intervention teacher.

• If you have any questions in the near future, please feel free to speak to your child’s class teacher or [mindfulness teacher].

Thank you!
Appendix 13: Participant information sheet – Parents/ Carers

Dear parent/ carer. My name is [researcher] and I am in my second year of the three year Doctorate in Educational and Child Psychology at the University of Manchester. This letter has been written to ask whether or not you would be happy for information about your child to be collected for my thesis – the research project that I need to complete to pass my doctorate.

Before you decide whether or not you would be happy for information about your child to be collected for my research project, it is important for you to understand why the research is being done and what it will involve. Please take time to carefully read this letter and talk about it with others if you like. Please ask me, Mrs Laura Beale (Assistant Vice Principal – Inclusion) or your child’s class teacher if there is anything that is not clear or if you would like more information. Take time to decide whether or not you are happy for information about your child to be collected for my research project. Thank you for reading this.

Who will conduct the research?
[researcher],
Doctorate in Educational and Child Psychology,
School of Education,
University of Manchester,
Oxford Road,
Manchester,
M13 9PL.

Title of the Research
Evaluating the impact of the Paws .b mindfulness programme on typically developing Primary School aged pupils’ attention and academic proxy measures.

What is the aim of the research?
I am hoping to answer the following research questions:

1. To what extent does the Paws .b mindfulness programme lead to an improvement in typically developing Primary School aged pupils’ suppressing and sustaining attention skills?

2. To what extent does the Paws .b mindfulness programme lead to an improvement in typically developing Primary School aged pupils’ academic proxy measures?

3. What aspects of the Paws .b mindfulness programme are perceived to be beneficial/ non-beneficial by typically developing Primary School aged pupils and their teachers?

Why has my child been chosen?
Harry Close Primary Academy is part of the New Directions Education Trust where I work 3-days a week as a Trainee Child and Educational Psychologist. When I joined the trust, Harry Close Primary Academy said that they would be happy to help me carry out my research project.
Harry Close Primary Academy decided that all of Year-4 would take part in a 6-week mindfulness programme called ‘Paws .b’ (designed by the Mindfulness in Schools Project) during the 2013/14 academic year to help improve their attention in the classroom. It was then decided that I would evaluate the Paws .b mindfulness programme for my research project.

As your child is in Year-4, they will take part in the 6-week Paws .b mindfulness programme at some point during the 2013/14 academic year. In order for me to evaluate the Paws .b mindfulness programme, I would like to find out whether or not you would be happy for information about your child to be collected for my research project.

I hope to collect information on all children in your child’s class, as well as all children in another Year-4 class.

What would I be asked to do if I agree for information about my child to be collected?
If you are happy for information about your child to be collected for my research project, you will be asked to complete an informed consent form and return it to your child’s class teacher.

The research itself would involve Mrs Laura Beale (Assistant Vice Principal – Inclusion) using the Paws .b mindfulness programme to help improve your child’s attention in the classroom using fun activities such as breathing and relaxation exercises.

The Paws .b mindfulness programme would involve a 1-hour lesson every week for 6-weeks. To help me evaluate the mindfulness programme, your child’s class teacher will be asked to complete two questionnaires throughout the 2013/14 academic year. These questionnaires will focus on your child’s attention and the quality of their work and will be collected on four occasions: in January 2014, February 2014, April 2014 and June 2014. I will also use a short assessment to measure your child’s attention at the same time-points which will last for approximately 5-minutes. Your child’s class teacher will then be asked to take part in a short interview when your child has finished the mindfulness programme. Your child may also be asked to take part in a short group discussion with other pupils.

There will be no risk, pain or discomfort from yours or your child’s perspective.

What happens to the information collected about my child?
The information collected about your child will be saved on an encrypted and password-protected memory stick. When my research has finished, the information will be deleted and will not be kept for longer than necessary, in accordance with the Data Protection Act (1998).

How is confidentiality maintained?
The information collected about your child will be kept confidential by referring to your child using a code.

What happens if I do not want information to be collected about my child? What happened if I change my mind?
It is up to you to whether you would like information to be collected about your child. If you decide that you are happy for information to be collected about your child, you will be asked to sign a consent form and return it to your child’s class teacher. You are still free to stop information been collected about your child any time without giving a reason.
Will I be paid for participating in the research?
You will not be paid for information to be collected about your child.

What is the duration of the research?
The mindfulness programme will run for 1-hour per week for 6-weeks, i.e., 6-hours in total.

Where will the research be conducted?
At Harry Close Primary Academy in your child’s classroom.

Will the outcomes of the research project be published?
It is intended that the outcomes of the research project will be published in an academic journal.

Contact for further information
For further information about the research project, please e-mail me at researcher@postgrad.manchester.ac.uk.

What if something goes wrong?
If there are any issues regarding this research that you would prefer not to discuss with members of the research team, please contact the Research Practice and Governance Co-ordinator by either writing to ‘The Research Practice and Governance Co-ordinator, Research Office, Christie Building, The University of Manchester, Oxford Road, Manchester M13 9PL’, by emailing: Research-Governance@manchester.ac.uk, or by telephoning 0161 275 7583 or 275 8093.
Evaluating the impact of the Paws .b mindfulness programme on mainstream Primary School aged pupils' attention and academic proxy measures

Appendix 14: Consent form - Parents/Carers

If you are happy for your child to participate please complete and sign the consent form below

1. I confirm that I have read the attached information sheets on the above study and have had the opportunity to consider the information and ask questions and had these answered satisfactorily.

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

3. I agree to the use of anonymous quotes

4. I agree that any data collected may be passed to other researchers

5. I agree that any data collected may be published in anonymous form in academic books or journals.

I agree to take part in the above project

Name of parent/carer

Date

Signature

Name of person taking consent
[researcher]

Date

Signature
پاوز پس انسام نے متعلق معلومات جمع کی جان سے خوش بین تو پرائی میرین اس رضامندی فارم

کو مکمل کرکے دستخط کریں۔

1. میں تصدیق کرتا/کرتی ہوں کہ میں نے مذکورہ بالا مطالعہ سے متعلق معلوماتی پرچہ پڑھا لیا ہے اور میرے پاس ان معلومات پر غور کرنے اور سوالات پوچھنے کا موقع تھا، جن کے جوابات تسنیمی بخش اندان کے دو تھا۔

2. میں سمجھتا/ سمجھتی ہوں کہ اس مطالعہ میں میرے بچے کی شرکت رضاکارانہ ہے اور یہ کہ میں اپے بچے کو کبھی بھی سیرے بہت بہت مطالعہ کے نال بچے کی اسم کا چاہئے جانے۔

3. میں خفیہ اقتباسات (quotes) استعمال کرتا/کرتی ہوں۔

4. میں اتفاق کرتا/کرتی ہوں کہ جمع شدہ کوئی بھی قسم کے دیگر تحقیق کندگان کو منتقل کیا جا سکتا ہے۔

5. میں اتفاق کرتا/کرتی ہوں کہ جمع شدہ کسی بھی کسی دیگر کو اکیڈمک کتابوں یا رسالوں میں گمنام طور پر شائع کیا جا سکتا ہے۔

میں مذکورہ بالا پروجیکٹ کے لئے اپے بچے کی معلومات جمع کی جان پر رضامند ہوں۔

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বার্ষিক তারিখ

সম্পাদিতের ব্যক্তির নাম

চূড়ান্ত তারিখ

পিতা/মাতা/কেয়ারারের নাম

বার্ষিক তারিখ

সম্পাদিতের ব্যক্তির নাম

চূড়ান্ত তারিখ

Appendix 16: Consent form - Parents/ Carers (Bengali)
Appendix 17 – Pupil assent form

My name is ______________________________

Please tick one box:

- “I am happy for my teacher and [researcher] to collect information about me”

- “I do not want my teacher and [researcher] to collect information about me”

Signed ______________________________
## Appendix 18: Time-line and time budget

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Activity</th>
<th>Completed by</th>
<th>Time budget</th>
</tr>
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<tbody>
<tr>
<td>Preparation</td>
<td>Build relationship with executive headteacher and mindfulness teacher at Harry Close Primary Academy</td>
<td>27/09/2013</td>
<td>2-hours</td>
</tr>
<tr>
<td></td>
<td>Provide mindfulness teacher with their participant information sheet and consent form (see Appendices 8 and 9)</td>
<td>12/11/2013</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Receive completed consent form from mindfulness teacher</td>
<td>12/11/2013</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Meeting with two Year-4 class teachers to discuss thesis research and provide them with their participant information sheet and consent form (see Appendices 10 and 11)</td>
<td>12/11/2013</td>
<td>1-hour</td>
</tr>
<tr>
<td></td>
<td>Receive completed consent forms from class teachers</td>
<td>12/11/2013</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Parent/ carer presentation with Urdu and Bengali translators to highlight main points in parent/ carer participant information sheet (see Appendix 12), as well as provide attending parents/ carers with their participant information sheet and English consent form (see Appendices 13 and 14).</td>
<td>19/11/2013</td>
<td>1-hour</td>
</tr>
<tr>
<td></td>
<td>Harry Close Primary Academy to distribute parent/ carer participant information sheets to those who did not attend the parent/ carer presentation (see Appendix 13).</td>
<td>19/11/2013</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Pilot Attention Checklist (Das, 2002; see Appendix 1) and Quality of Work Produced in Class questionnaire (see Appendix 2) with Year-4 class teacher at Mill Hill Primary Academy</td>
<td>20/11/2013</td>
<td>1-hour</td>
</tr>
<tr>
<td></td>
<td>Harry Close Primary Academy to distribute Urdu</td>
<td>25/11/2013</td>
<td>15-minutes</td>
</tr>
<tr>
<td>Activity</td>
<td>Date</td>
<td>Time</td>
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<tr>
<td>and Bengali translated consent forms to parents/carers (see Appendices 15 and 16)</td>
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<tr>
<td>Pilot naming and inhibition sections of the Inhibition subtest within the NEPSY-II&lt;sup&gt;UK&lt;/sup&gt; (Korkman, Kirk &amp; Kemp, 2007) with Year-4 pupils at Mill Hill Primary Academy</td>
<td>06/12/2013</td>
<td>1-hour</td>
<td></td>
</tr>
<tr>
<td>Class teachers to collate parent/carer consent forms</td>
<td>20/12/2013</td>
<td>1-hour</td>
<td></td>
</tr>
<tr>
<td>Researcher to seek pupil assent for information to be collected about them (see Appendix 17)</td>
<td>20/12/2013</td>
<td>1-hour</td>
<td></td>
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<tr>
<td>Paws .b mindfulness programme</td>
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<tr>
<td>Mindfulness teacher delivers the 6-week Paws .b mindfulness intervention to the experimental group throughout the January to February 2014 half term (i.e., between baseline and time-1)</td>
<td>14/02/2014</td>
<td>6-hours</td>
<td></td>
</tr>
<tr>
<td>Mindfulness teacher delivers the 6-week Paws .b mindfulness programme to the WCG throughout the February to April 2014 half term (i.e., between time-1 and time-2)</td>
<td>04/04/2014</td>
<td>6-hours</td>
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<tr>
<td>Baseline data collection</td>
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<tr>
<td>Year-4 class teachers complete Quality of Work Produced in Class questionnaire (see Appendix 2) every week for each pupil by the end of the November to December 2013 half term</td>
<td>20/12/2013</td>
<td>17-minutes</td>
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<tr>
<td>Researcher to access National Curriculum levels of progress data (see Appendix 3) for each pupil by the end of the November to December 2013 half term</td>
<td>20/12/2013</td>
<td>15-minutes</td>
<td></td>
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<tr>
<td>Year-4 class teachers to complete Attention Checklist (Das, 2002; see Appendix 1) for each pupil at the beginning of the January to February 2014 half term</td>
<td>07/01/2013</td>
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<tr>
<td>Researcher to complete the naming and inhibition sections of the Inhibition subtest within the NEPSY-II&lt;sup&gt;UK&lt;/sup&gt; (Korkman et al., 2007)</td>
<td>07/01/2013</td>
<td>2-hours 45-minutes</td>
<td></td>
</tr>
<tr>
<td>Time-1 data collection</td>
<td></td>
<td>Date</td>
<td>Duration</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>for each pupil at the beginning of the January to February 2014 half term</td>
<td>Year-4 class teachers complete Quality of Work Produced in Class questionnaire (see Appendix 2) every week for each pupil by the end of the January to February 2014 half term</td>
<td>14/02/2014</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Researcher to access National Curriculum levels of progress data (see Appendix 3) for each pupil by the end of the January to February 2014 half term</td>
<td>14/02/2014</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Year-4 class teachers to complete Attention Checklist (Das, 2002; see Appendix 1) for each pupil at the beginning of the February to April 2014 half term</td>
<td>24/02/2014</td>
<td>21-minutes</td>
</tr>
<tr>
<td></td>
<td>Researcher to complete the naming and inhibition sections of the Inhibition subtest within the NEPSY-II\textsuperscript{UK} (Korkman et al., 2007) for each pupil at the beginning of the February to April 2014 half term</td>
<td>24/02/2014</td>
<td>2-hours 45-minutes</td>
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<td></td>
<td>Researcher to hold semi-structured interview with experimental teacher (see Appendix 5)</td>
<td>24/02/2014</td>
<td>1-hour</td>
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<tr>
<td></td>
<td>Researcher to hold FG with subset of experimental pupils (see Appendix 4)</td>
<td>24/02/2014</td>
<td>45-minutes</td>
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<tr>
<td>Time-2 data collection</td>
<td>Year-4 class teachers complete Quality of Work Produced in Class questionnaire (see Appendix 2) every week for each pupil by the end of the February to April 2014 half term</td>
<td>04/04/2014</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Researcher to access National Curriculum levels of progress data (see Appendix 3) for each pupil by the end of February to April 2014 half term</td>
<td>04/04/2014</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Year-4 class teachers to complete Attention Checklist (Das, 2002; see Appendix 1) for each pupil at the beginning of the April to June 2014</td>
<td>22/04/2014</td>
<td>21-minutes</td>
</tr>
<tr>
<td>Time-3 data collection</td>
<td>Researcher to complete the naming and inhibition sections of the Inhibition subtest within the NEPSY-II&lt;sup&gt;UK&lt;/sup&gt; (Korkman et al., 2007) for each pupil at the beginning of the April to June 2014 half term</td>
<td>22/04/2014</td>
<td>2-hours 45-minutes</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Researcher to hold semi-structured interview with the mindfulness teacher and the waitlist control teachers (see Appendix 5)</td>
<td>24/02/2014</td>
<td>1-hour</td>
<td></td>
</tr>
<tr>
<td>Researcher to hold FG with subset of waitlist control pupils (see Appendix 4)</td>
<td>24/02/2014</td>
<td>45-minutes</td>
<td></td>
</tr>
<tr>
<td>Time-3 data collection</td>
<td>Year-4 class teachers complete Quality of Work Produced in Class questionnaire (see Appendix 2) every week for each pupil by the end of the April to June 2014 half term</td>
<td>23/05/2014</td>
<td>13-minutes</td>
</tr>
<tr>
<td></td>
<td>Researcher to access National Curriculum levels of progress data (see Appendix 3) for each pupil by the end of the April to June 2014 half term</td>
<td>23/05/2014</td>
<td>15-minutes</td>
</tr>
<tr>
<td></td>
<td>Year-4 class teachers to complete Attention Checklist (Das, 2002; see Appendix 1) for each pupil at the beginning of the June to July 2014 half term</td>
<td>02/06/2014</td>
<td>21-minutes</td>
</tr>
<tr>
<td></td>
<td>Researcher to complete the naming and inhibition sections of the Inhibition subtest within the NEPSY-II&lt;sup&gt;UK&lt;/sup&gt; (Korkman et al., 2007) for each pupil at the beginning of the June to July 2014 half term</td>
<td>02/06/2014</td>
<td>2-hours 45-minutes</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Within and between group comparisons of attention data gleaned from Attention Checklist (Das, 2002; see Appendix 1) and naming and inhibition sections of the Inhibition subtest within the NEPSY-II&lt;sup&gt;UK&lt;/sup&gt; (Korkman et al., 2007)</td>
<td>18/07/2014</td>
<td>5-days</td>
</tr>
</tbody>
</table>
Within and between group comparisons of academic proxy measure data gleaned from Quality of Work Produced in Class questionnaire (see Appendix 2) and pupil National Curriculum levels of progress (see Appendix 3)

Partial transcription and TA (Braun & Clarke, 2006) of teacher semi-structured interviews (see Appendix 6) and pupil FGs (see Appendix 4)

<table>
<thead>
<tr>
<th>Write up</th>
<th>Complete write up of thesis research project</th>
<th>05/01/2015</th>
<th>34-days</th>
</tr>
</thead>
<tbody>
<tr>
<td>First draft submission</td>
<td>Submit first draft of thesis research project</td>
<td>05/01/2015</td>
<td>1-hour</td>
</tr>
</tbody>
</table>
## Appendix 19: Operational risk analysis

<table>
<thead>
<tr>
<th>Risk</th>
<th>Level of risk</th>
<th>Contingency plan</th>
</tr>
</thead>
</table>
| Difficulty gaining parent/carer consent                              | Medium        | • Hold information morning for parents/carers with Urdu and Bengali translators present.  
                                                                                         • Translate parent/carer consent form into Urdu and Bengali.  
                                                                                         • Collect information on all pupils whose parent/carers returned a consent form. |
<p>| Difficulty gaining pupil assent                                      | Low           | • Collect information on all pupils who give their assent for information to be gathered about them                                               |
| Parents/carers may withdraw their children from the research project | Low           | • Collect information on all remaining pupils.                                                                                                  |
| Pupils may withdraw themselves from the research project              | Low           | • Collect information on all remaining pupils.                                                                                                  |
| Pupil attrition throughout 2013/14 academic year                     | Low           | • Collect information on all remaining pupils.                                                                                                  |
| Year-4 class teacher delay in completing Attention Checklist (Das, 2002; see Appendix 1) and quality of work produced in class questionnaire | Low           | • Provide Year-4 class teachers with Attention Checklist and quality of work produced in class questionnaires at least 1-week before the data are due. |
| Year-4 class teacher illness                                         | Medium        | • If class teacher illness leads to a lapse in their data gathering, allow flexibility in completing data-gathering, if slightly after desired      |
| Year-4 class teacher attrition | High | • If a Year-4 class teacher leaves Harry Close Primary Academy, they will quickly be replaced by a long-term supply teacher and they can resume the class teacher’s data gathering, subject to their consent. |
| Year-4 class teachers may withdraw from the research project | Low | • For both class teachers, the executive principal of Harry Close Primary Academy has framed their cooperation in the research project as continuing professional development, and all time needed to complete data gathering will be protected. |
| Mindfulness teacher illness | Medium | • If the mindfulness teacher is unable to deliver a Paws .b mindfulness programme lesson, the other Year-4 class teacher at Harry Close Primary Academy who has been trained to deliver the Paws .b mindfulness programme will take over. |
| Mindfulness teacher attrition | High | • If the mindfulness teacher is unable to deliver a Paws .b mindfulness programme lesson, the other class Year-4 class teacher at Harry Close Primary Academy who has been trained to deliver the Paws .b mindfulness programme will take over. |
| Mindfulness teacher may withdraw from the research project | High | • The executive principal of Harry Close Primary Academy has |</p>
<table>
<thead>
<tr>
<th>Project</th>
<th>Framed the mindfulness teacher’s cooperation in the research project as continuing professional development, and all time needed to complete data gathering will be protected.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• The mindfulness teacher was the member of staff who made the changes to the Year-4 curriculum to include the Paws.b mindfulness programme without the influence of the researcher.</td>
</tr>
</tbody>
</table>

| Researcher delay in completing naming and inhibition section of the Inhibition subtest within the NEPSY-II<sup>UK</sup> (Korkman et al., 2007) | Low | • Ensure that any tight timings to complete the naming and inhibition section of the Inhibition subtest within the NEPSY-II<sup>UK</sup> are managed, with flexibility around the time-points when the assessments should take place. |
The School of Education is committed to developing and supporting the highest standards of research in education and its associated fields. The Research Risk and Ethics Assessment (RREA) resource has been created in order to maintain these high academic standards and associated codes of good research practice. The research portfolio within the School of Education covers a wide range of fields and perspectives. Research within each of these areas places responsibilities of a differing nature on supervisors and students subject to course, level, focus and participants. The aim of the Research Risk and Ethics Assessment is to assist supervisors and students in assessing these factors.

The School has determined three levels of Research Risk each of which has a number of associated criteria and have implications for the degree of ethical review required. In general, the research risk level is considered to be:

- **High** IF the research focuses on groups within society in need of special support, or where it may be non-standard, or if there is a possibility the research may be contentious in one or more ways.
- **Medium** IF the research follows standard procedures and established research methodologies and is considered non-contentious.
- **Low** IF the research is of a routine nature and is considered non-contentious.

Agreement to proceed with research at each of these levels is provided by an appropriate University Research Ethics Committee, a School of Education Research Integrity Committee member, or by the supervisor/tutor respectively.

**How to complete the Research Risk and Ethics Assessment (RREA) form.**
This form should be completed, in consultation with the School of Education Ethical Practice Policy Guidelines, by School of Education students and their supervisors in all cases, except where a pre-approved assignment template currently exists. There are six main sections to this document, with three additional sections for UG/PGT research (or Prof Doc Research Papers) seeking ethical approval for LOW risk studies from a supervisor/tutor:

**ANY student**
- Section A – Summary of Research Proposal (page 1)
- Section B – Description of Research (page 2)
- Sections C.0-C.1 – Criteria for HIGH risk research (page 4)
- Section C.2 – Criteria for MEDIUM risk research (page 6)
- Section C.3 – Criteria for LOW risk research (page 8)

**Where indicated**
- Section D – LOW risk Fieldwork Declaration (page 9)

**UG/PGT students and Prof Doc students completing Research Papers only**
- Section E.1 – Criteria for LOW risk PGT/UG approval (page 11)

**Supervisors and tutor approvals of LOW risk student research**
- Section E.2 – Supervisor confirmation that research matches LOW risk criteria (page 12)
- Section E.3 – Minor Amendments to LOW risk study and supervisor approval (page 13)

It may be appropriate for supervisors and students to review and discuss responses to these questions together.

**NB:** A separate Fieldwork Risk Assessment form must be completed as indicated in this RREA, in order to plan how safety issues will be responded to during fieldwork visits. The Fieldwork Risk Assessment form is available on the School of Education ethics intranet. For all projects where this does not apply, a LOW Risk...
Fieldwork Declaration (Section D) must be completed. Instructions on this and subsequent stages of the RREA process are provided at the end of each following section.
# SECTION A - SUMMARY OF RESEARCH PROPOSAL

This section should be completed by the person undertaking the research.

<table>
<thead>
<tr>
<th>A1. Name of Person/Student:</th>
<th>[researcher]</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2. Student ID (quoted on library/swipe card):</td>
<td>7035643</td>
</tr>
<tr>
<td>A3. Email Address:</td>
<td><a href="mailto:researcher@live.co.uk">researcher@live.co.uk</a></td>
</tr>
<tr>
<td>A4. Name of Supervisor:</td>
<td>Dr. Cathy Atkinson</td>
</tr>
<tr>
<td>A5. Supervisor email address &amp; contact phone no.:</td>
<td><a href="mailto:cathy.atkinson@manchester.ac.uk">cathy.atkinson@manchester.ac.uk</a> +44 (0)161 275 3512</td>
</tr>
<tr>
<td>A6. Programme (PhD, ProfDoc, MEd, PGCE, MSc, BA etc):</td>
<td>DEdChPsychol</td>
</tr>
<tr>
<td>A7. Year of Study</td>
<td>2</td>
</tr>
<tr>
<td>A9. Course Code</td>
<td>N/A</td>
</tr>
<tr>
<td>A10. Title of Project:</td>
<td>Evaluating the impact of mindfulness attention state training on typically developing Primary School aged pupils' attention and academic proxy measures</td>
</tr>
<tr>
<td>A11. Participant Recruitment Start Date:</td>
<td>On confirmation of ethical approval</td>
</tr>
<tr>
<td>A13. Proposed Fieldwork Start Date:</td>
<td>November 2013</td>
</tr>
<tr>
<td>A14. Location(s) where the project will be carried out:</td>
<td>Mill Hill Primary Academy; Harry Close Primary Academy</td>
</tr>
<tr>
<td>A15. Student Signature:</td>
<td>[Signature]</td>
</tr>
</tbody>
</table>

The following section to be completed by the SUPERVISOR

SECTION B – DESCRIPTION OF RESEARCH

This section should be completed by the person undertaking the research.

B1. Provide an outline description of the planned research (250 words max).

Between September 2013 and January 2014, the researcher will recruit two Year-4 teachers, and their pupils, and once consent has been received from the Primary School headteachers, the Year-4 teachers, the Year-4 pupils’ parents/carers, and the Year-4 pupils themselves, both groups of teachers and pupils will be randomly allocated to either the experimental group or the waitlist control group (WCG).

The experimental teacher will be trained to deliver Mindfulness Attention State Training (MAST) to their pupils prior to the beginning of the January 2014 to February 2014 half term using materials created by the researcher. The teacher will then deliver 1-hour of MAST to their pupils per week for 8-weeks throughout the January 2014 to February 2014 half term and into the February 2014 to April 2014 half term. The waitlist control teacher will then be trained to deliver MAST to their pupils during the January 2014 to February 2014 half term and will also deliver 1-hour of MAST to their pupils per week for 8-weeks throughout the February 2014 to April 2014 half term and into the April 2014 to May 2014 half term. The researcher will provide weekly supervision to the teachers and will observe them delivering MAST once per week.

During the January 2014 to February 2014 period, the researcher will administer an attention questionnaire to the two teachers for each of their pupils (and possibly the pupils’ parents/carers), as well as two attainment data questionnaires. The author will also carry out a short assessment of pupils’ attention skills using a single subtest on a standardised test called the NEPSY-II. These questionnaires and assessments will be repeated during the February 2014 to April 2014 period, the April 2014 to May 2014 period, and the May 2014 to July 2014 period. The researcher also plans to hold a semi-structured interview with the teachers, as well as a Focus Group with a small number of their pupils, following their completion of 8-weeks of MAST.

B2. The principal research methods and methodologies are (250 words max):

A mixed methods design with a quasi-experimental intervention cross over will be employed by the researcher. Quantitative data will be gathered using three questionnaires: the Attention Checklist (Das, 2002); and, the two teacher attainment data questionnaires, as well as the researcher’s assessments using a single subtest on the NEPSY-II. Qualitative data will be gathered using the two semi-structured teacher interviews and the two pupil Focus Groups, whereby such data will be gathered using audio recorders and partial transcription. Using these data, the following research questions (RQs) will be answered:

RQ1. Does MAST for typically developing Primary School aged children improve their attention?

RQ2. Does MAST lead to an improvement in typically developing Primary School aged children’s academic proxy measures?

RQ3. What aspects of MAST are perceived to be beneficial/non-beneficial by typically developing Primary School aged children and their teachers?
B3. Please indicate which of the following groups are expected to participate in this research:

- Children under 16, other than those in school, youth club, or other accredited organisations.
- Adults with learning difficulties, other than those in familiar, supportive environments.
- Adults who are unable to self-consent
- Adults with mental illness
- Those who could be considered to have a particularly dependent relationship with the researcher
- Prisoners
- Young Offenders
- Other vulnerable groups (please detail)

OR

X None of the above groups are involved in this study

B4. Number of expected research participants. 62

B5. The research will take place (tick all that apply):

X within the UK

within the researcher’s home country if outside the UK

wholly or partly outside the UK and not in the home country of the researcher*

* You must also complete a separate Fieldwork Risk Assessment form

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* The person with learning difficulties has appropriate support within the setting from accredited support workers or family members.

* The researcher’s ‘home country’ is defined as one in which (1) the researcher holds a current passport through birthright or foreign birth registration, (2) a country where the researcher has resident status, or (3) where the researcher holds a permit or visa to work, has a contract of employment, and is not a UK tax-payer.
SECTION C – RESEARCH RISK ASSESSMENT
The following sections should be completed by the person undertaking the research in discussion with their supervisor/tutor.

C.0 – Criteria for research classified as HIGH RISK – NRES

- The study involves primary research with adults who are unable to self consent
- The study involves primary research with NHS patients
- The study involves primary research with prisoners/young offenders

Students - If any of these options apply, you should complete an NRES application. See your supervisor for further guidance.

Supervisors – Forward this RREA form to ethics.education@manchester.ac.uk when you are satisfied that the project requires an IRAS application.

C.1 – Criteria for research classified as HIGH RISK (tick any that apply)

I/we confirm that this research:

- involves vulnerable or potentially vulnerable individuals or groups as indicated in B3
- addresses themes or issues in respect of participant’s personal experience which may be of a sensitive nature (i.e. the research has the potential to create a degree of discomfort or anxiety amongst one or more participants)
- cannot be completed without data collection or associated activities which place the researcher and/or participants at personal risk*
- requires participant informed consent and/or withdrawal procedures which are not consistent with accepted practice
- addresses an area where access to personal records (e.g. medical), in collaboration with an authorised person, is not possible
- involves primary data collection on an area of public or social objection (e.g. terrorism, paedophilia)
- makes use of video or other images captured by the researcher, and/or research study participants, where the researcher cannot guarantee controlled access to authorised viewing.
- will involve direct contact with participants in countries on the Foreign and Commonwealth Office warning list*6
- involves face to face contact with research participants outside normal working hours*7 that may be seen as unsocial or inconvenient*
- will take place wholly or partly without training or qualified supervision*
- requires appropriate vaccinations which are unavailable*
- will take place in locations where first aid and/or other medical support or facilities are not available within 30 minutes*
- may involve the researcher operating machinery, electrical equipment, or workplace vehicles, or handling or working with animals at the research location(s), for which they are not qualified, and where a qualified operative or handler is not available to act as supervisor.*

➤ * IF YOU HAVE TICKED these HIGH risk criteria you must also complete a separate Fieldwork Risk Assessment form

➤ IF YOU HAVE ONLY TICKED HIGH risk criteria NOT marked (*) you MUST complete the LOW Risk Fieldwork Declaration on page 9 of this form

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7 For example, in the UK, normal working hours are between 8am-6pm, Mon-Fri inclusive.
The documents listed above should be submitted to:

A. Mrs. Debbie Kubiena, Room B3.10 along with your PhD Research Plan for consideration at the PhD/Prof Doctorate Review Panel.

B. The Quality Assurance Administrator via Ethics.Education@manchester.ac.uk by your supervisor. In doing so, supervisors confirm that they have agreed the assessed risk level and that the documents are complete and correct. The QA Administrator will arrange authorisation for your documents to be submitted to UREC.

C. The Quality Assurance Administrator via Ethics.Education@manchester.ac.uk by your supervisor. In doing so, supervisors confirm that they have agreed the assessed risk level and that the documents are complete and correct. The QA Administrator will forward your completed documents to a member of the SoE RIC committee for approval.

If no HIGH risk items are ticked supervisors and students should continue to section C.2 on the next page ➔
C.2 – Criteria for research classified as MEDIUM RISK (tick any that apply)

I/we confirm that this research:

- is primary research involving children or other vulnerable groups which involves direct contact with participants.
- study is on a subject that a reasonable person would agree addresses issues of legitimate interest, where there is a possibility that the topic may result in distress or upset in rare instances.
- is primary research which involves substantial direct contact with adults in non-professional roles.
- is primary research which focuses on data collection from professionals responding to questions outside of their professional concerns.
- is primary research involving data collection from participants outside of the EU or the researcher’s home country via direct telephone, video, or other linked communications.
- is practice review/evaluation involving topics of a sensitive nature which are not personal to the participants.
- involves visits to site(s) where a specific risk to participants and/or the researcher has been identified, and the researcher may not be closely supervised throughout.
- requires specific training and this is scheduled to be completed before fieldwork starts, or, training will not be undertaken but the research will be closely supervised by an academic advisor with appropriate qualifications and skills.
- requires vaccinations which have been received, or are scheduled to be received in a timely fashion.
- requires face to face contact with research participants partly outside normal working hours that may be seen as inconvenient.
- takes place in, or involves transport to and from, locations where the researcher’s lack of familiarity may put them at personal risk.
- may require the operation of machinery, electrical equipment, or workplace vehicles, or handling or working with animals at the research location(s), for which they are not qualified, but such operation or handling will be undertaken under close supervision from a qualified operative or handler.

- IF YOU HAVE TICKED these MEDIUM risk criteria you must also complete a separate Fieldwork Risk Assessment form.

- IF YOU HAVE ONLY TICKED MEDIUM risk criteria NOT marked (*) you MUST also complete the LOW Fieldwork Risk Declaration on page 9 of this form.

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8 This does not include research in locations where children are present if they are not the focus of the research.
9 For example in focus group or one to one interview in private locations, and not ‘market research’ which is characterised by brief interaction with randomly selected individuals in public locations.
10 In the UK normal working hours are between 8am-6pm, Mon-Fri inclusive.
If ONE OR MORE of the **MEDIUM risk** criteria have been selected, ethical approval must be sought from the School of Education (SoE) Research Integrity Committee (RIC) and so you should complete the SoE Ethical Approval Application form (available on the School of Education Ethics Intranet).

The supervisor and student should agree this RREA assessment and submit:

- Completed RREA form
- Completed School of Education Ethical Approval Application form
- Completed Fieldwork Risk Assessment form where indicated
- Supporting documents.

**NB:** ‘Supporting documents’ include recruitment adverts/emails, draft questionnaires / interview topic guides, information sheets and consent forms.

**Document should be submitted for review as indicated below:**

A. **PGR Thesis** - Mrs. Debbie Kubiena, Room B3.10 along with your PhD Research Plan for consideration at the PhD/Prof Doctorate Review Panel.

B. **All other cases** - to the Quality Assurance Administrator via Ethics.Education@manchester.ac.uk by your supervisor. In doing so, supervisors confirm that they have agreed the assessed risk level and that the documents are complete and correct. The QA Administrator will forward your completed documents to a member of the SoE RIC committee for approval.

---

If none of the **HIGH or MEDIUM risk criteria have been ticked, supervisors and students should continue to section C3 on the next page**

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11 This document and guidance for completion can downloaded from [http://www.education.manchester.ac.uk/intranet/ethics](http://www.education.manchester.ac.uk/intranet/ethics)
### C3.1 Research not involving human participants

I/we confirm that this research (tick as appropriate):

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>is not of high nor medium risk to the researcher, in accordance with the criteria provided in sections C.1 and C.2 respectively.</td>
</tr>
<tr>
<td></td>
<td>is Secondary research (i.e. it will use material that has already been published or is in the public domain).</td>
</tr>
<tr>
<td></td>
<td>is Secondary data analysis (i.e. it will involve data from an established data archive).</td>
</tr>
</tbody>
</table>

If you have ticked one of the options in C3.1 above, and C3.2 does not apply, you should now complete section C3.3.

### C3.2 Research involving human participants

I/we confirm that this research (tick as appropriate):

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>is not of high nor medium risk to the researcher, or participants, in accordance with the criteria provided in sections C.0, C.1 and C.2 respectively.</td>
</tr>
<tr>
<td></td>
<td>A reasonable person would agree that the study addresses issues of legitimate interest without being in any way likely to inflame opinion or cause distress.</td>
</tr>
<tr>
<td></td>
<td>is Practice review (i.e. the research involves data collection from participants on issues relating to the researcher’s professional role, in a setting where the researcher is employed or on a professional placement).</td>
</tr>
<tr>
<td></td>
<td>is Practice evaluation (i.e. the research involves data collection on a student’s professional role, in a setting where the researcher is employed or on a professional placement. The data collected will be used for comparison against national or other targets or standards).</td>
</tr>
<tr>
<td></td>
<td>is Primary research on professional practice with participants in professional roles conducted in their work setting.</td>
</tr>
<tr>
<td></td>
<td>is Market research (i.e. the research may involve data collection from the general public approached or observed in public locations for the purposes of market investigation).</td>
</tr>
<tr>
<td></td>
<td>is Primary research using a questionnaire completed and returned by participants with no direct contact with the researcher.</td>
</tr>
<tr>
<td></td>
<td>is part of a research methods course and participant groups are limited to peers, colleagues, family members and friends.</td>
</tr>
</tbody>
</table>

### C3.3 Research context

I/we confirm (tick as appropriate):

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>the location(s) of the research are not listed on the Foreign and Commonwealth Office warning lists.</td>
</tr>
<tr>
<td></td>
<td>the researcher is not in a position to coerce potential participants/secondary data owners</td>
</tr>
<tr>
<td></td>
<td>Primary or practice research involves no vulnerable group (as indicated in question B3).</td>
</tr>
<tr>
<td></td>
<td>Primary or practice research will be conducted in a public space or building (e.g. the high street, the University campus, a school building, etc).</td>
</tr>
</tbody>
</table>

---

12 A reasonable person would agree that the study includes no issues of public or private objection, or of a sensitive nature.

D. LOW Risk Fieldwork Declaration

Students not directed to complete the separate Fieldwork Risk Assessment in Section C should tick the items in D.1 or D.2 to confirm the LOW risk nature of their fieldwork visits. Then sign the Declaration in D.3

D.1 Fieldwork visit items (If you will not make any fieldwork visits, tick the alternative items in D.2 below.)

I/we confirm:

- [X] the researcher will not travel outside the UK or their home nation.
- [X] the fieldwork does not require overnight stays in hotels or other types of public temporary accommodation.
- [X] public and private travel to and from the research location(s) are familiar to the researcher and offer no discernable risk.
- [X] the researcher will not travel through, or work in research locations which may have unlit areas, derelict areas, cliffs, or local endemic diseases.
- [X] the researcher will carry only necessary personal items when travelling to, and within, research locations.
- [X] no specific vaccinations are required to undertake this research.
- [X] first aid provision and a trained first aider are available where appropriate.
- [X] the researcher will only operate machinery, electrical equipment, or workplace vehicles, or handle or work with animals at the research location(s) if they are qualified to do so.
- [X] the fieldwork will be carried out within normal working hours at a time convenient to participants.
- [X] the researcher will not give out personal telephone information to participants, or owners of secondary data resources, in relation to the research project.
- [X] the researcher is fully aware of and sensitive to cultural and religious practices of participant groups, and will act accordingly.
- [X] primary or practice research will not involve fieldwork visits to private homes.
- [X] the researcher will provide a regularly updated fieldwork visit schedule to a nominated University contact.
- [X] the researcher will carry a School of Education Emergency Contact Information Card during all fieldwork visits.

If you are unable to tick all items above, you must complete a separate Fieldwork Risk Assessment form.

D.2 No Fieldwork visits items

I/we confirm:

- [ ] this research does not involve fieldwork visits of any kind.
- [ ] the researcher will not give out personal telephone information to participants, or owners of secondary data resources, in relation to the research project.

D.3 Researcher Declaration:

By signing this completed document, I declare that the information in it is accurate to the best of my knowledge and that I will complete any actions that I have indicated I will complete.

Signature: 

Date 31/08/2013

Name (in capitals): [researcher] 

Student ID: 7035643

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14 For example, in the UK normal working hours are between 8am and 6pm Mon-Fri inclusive.
PGR Panel Students

If ONE OR MORE of the LOW risk criteria above have been selected, ethical approval must be sought from the School of Education Research Integrity Committee. The supervisor and student should agree this research risk assessment and submit:

- Completed RREA form
- Completed the School of Education Ethical Approval Application form\(^\text{15}\).
- Completed Fieldwork Risk Assessment form where indicated
- Supporting documents

NB: ‘Supporting documents’ include recruitment adverts-emails, draft questionnaires / interview topic guides, information sheets and consent forms.

Documents should be submitted to:
Mrs. Debbie Kubiena, Room B3.10 along with your PhD Research Plan for consideration at the PhD/Prof Doctorate Review Panel.

\(\Rightarrow\) UG and PGT research that involves only low risk criteria go to Section E.1 page 12

\(^{15}\) This document and guidance for completion can downloaded from [http://www.education.manchester.ac.uk/intranet/ethics](http://www.education.manchester.ac.uk/intranet/ethics)
SECTION E – UG/PGT Ethical Approval Application for LOW risk research

Section E.1 to be completed by students. Section E.2 to be completed by supervisors/tutors

E. 1  Research ethics criteria

I/we confirm (tick as appropriate):

**Codes of Practice**

- I/we have read and understood the School of Education Ethical Practice and Policy Guidelines
- the researcher will abide by the School of Education’s Ethical Protocol detailed therein
- the researcher is aware of and will abide by any organisation’s codes of conduct relevant to this research

**Researcher skills/checks**

- all necessary training procedures for this research have been completed
- all appropriate permissions have been obtained to use any database or resource to be analysed in Secondary research
- all relevant enhanced CRB checks have been completed
- written permission to be on the site to conduct primary research has been received

**Rights of participants**

- participant information sheets (PIS), consent forms, questionnaires, and all other documentation relevant to this research have been discussed with supervisor/tutor named in A.5
- PIS and consent forms have been confirmed by the supervisor named in A.5, as covering required headings illustrated in the School of Education Participant Information and consent templates, AND as accessible to proposed participant groups.
- the researcher understands the Data Protection Act and the University Data Protection Policy and all data will be handled confidentially and securely, including storage on encrypted devices.

**Research Integrity**

- no data will be collected before approval of the study by the supervisor/tutor
- the student researcher will immediately report any issues arising during the course of the study that conflict with the School of Education protocol, to the supervisor who has signed the ethics approval and suspend data collection pending advice from that supervisor/tutor
- the researcher will report any proposed deviation from the research specification outlined in this assessment to the supervisor/tutor to update the current assessment or clarify any need for further approvals BEFORE such changes are made

**Research output**

- the only publication/output from this research will be the assignment or dissertation unless consent has been obtained from participants for further dissemination
E.2 Supervisor confirmation that research matches LOW risk criteria above.

When satisfied that the assessment is correct, supervisors should complete this section.

For 'low risk' research approval relevant items in bold must be ticked and one or more of the specific research criteria as appropriate.

The supervisor confirms:

- The submission has been discussed and agreed with the person(s) undertaking the research.
- The student has had appropriate training and has the skills to undertake this study, or has qualified supervision in place.
- The research activities outlined in the proposal involve no substantive risks to the student researcher or potential participants.

and one or more of the following as appropriate:

- Primary or Practice research will not address issues of public or social objection or of a sensitive nature.
- Information giving and consent taking processes follow School of Education guidance.
- Where fieldwork visits do not correspond to all items in the LOW Risk Fieldwork Declaration, a separate Fieldwork Risk Assessment form has been completed and approved.
- Secondary research assignment/project has appropriate resource or database access permissions.
- They will act as custodian for data used for any study that results in a publication (Masters dissertation or otherwise) and will arrange for archiving of data within the School for a minimum period of 5 years.

**Supervisor’s signature:**  
**Date:**

**IF all relevant items in BOLD** are confirmed and in addition all specific criteria relating to primary, practice or secondary research are confirmed as appropriate, the supervisor should submit:

- Completed RREA form
- Completed Fieldwork Risk Assessment form where indicated
- Student research proposal, or equivalent, on which the assessment is based
- Supporting documents

**Documents should be submitted electronically for archiving and audit purposes,** to the Quality Assurance Administrator via Ethics.Education@manchester.ac.uk by the supervisor. In doing so, supervisors confirm that they have agreed the assessed risk level and that the documents are complete and correct. The QA administrator will acknowledge receipt of the documents and provide formal confirmation of ethical approval via email to both student and supervisor. Copies of all documents should be retained by the supervisor.

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16 ‘Supporting documents’ include recruitment adverts/emails, draft questionnaires/interview topic guides, information sheets and consent forms
E.3 Amendments to proposed research design for LOW risk research

Any minor amendment to low risk approved research submissions should be recorded and signed-off by the supervisor as necessary below. Substantial changes to research will require a reassessment and revised ethical approvals. A revised copy of the RREA showing the approved amendments, and any amended supporting documents, should be forwarded electronically to The QA administrator via ethics.education@manchester.ac.uk. The QA administrator will provide formal acknowledgement of approval of the change by email. A copy should be retained by the supervisor.

To be completed if/when applicable:

| Minor amendment to assessed research agreed (1): |
| Details of amendment |

Relative to the above, the researcher now plans to gain consent from parents/carers for information to be collected about their children. The rationale for this change is that all three Year-4 classes at Harry Close Primary Academy will receive the ‘Paws .b’ mindfulness programme, designed by the Mindfulness in Schools Project, at some point during the 2013/14 academic year as part of their Personal, Social, Health and Citizenship Education (PSHCE) curriculum. Furthermore, this change to the delivery of the PSHCE curriculum at Harry Close Primary Academy was going to happen regardless of the researcher’s input. Therefore, for two of the three Year-4 classes, the researcher hopes to evaluate the impact of the ‘Paws .b’ mindfulness programme in exactly the same way as described above, using the same mixed methods design with a quasi-experimental intervention cross over. Hence why the researcher will be asking parents from these two classes to consent to information being collected about their children.

Upon discussing parental/carer consent with Mrs Laura Beale, the Assistant Vice Principal at Harry Close Primary Academy who has responsibility for inclusion and special educational needs (SEN), she informed the researcher of parental language barriers and literacy difficulties (i.e., 98% of pupils at Harry Close Primary Academy have English as an additional language, or EAL, status and the many parents/carers have literacy difficulties). Mrs Laura Beale, along with all members of the senior leadership team, have therefore found, through years of experience within their community, that the most effective way to communicate new information with parents/carers is to send parents/carers an invitation to attend an information morning where interpreters will be employed. Then, during the information morning, staff can communicate, and have translated, the new information, and thus allow parents to communicate with staff through the interpreters. Furthermore, because of the employment demographic of parents/carers at Harry Close Primary Academy, Mrs Laura Beale and other members of the senior leadership team have informed the researcher that the information mornings are very well attended.

Therefore, the researcher plans to hold such an information morning and allow parents who attend to consent to information being collected about their child. However, for those who do not attend, the researcher has amended the parent information sheet to

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17 Minor amendments are those that do not alter the character of the research or the participant groups.
18 Minor deviations from previously approved research submissions are defined as those which neither change the nature of the study nor deviate from any participatory research groups previously identified. Supervisors should contact a member of the SoE Research Integrity Committee for advice if in doubt.
reflect the above. The class teacher and MAST facilitator information sheets have also been amended to reflect the fact that Laura Beale will be delivering the Paws .b intervention to the two classes, whereby the class teachers will be asked to complete the outcome measures.

Supervisor’s signature: ___________________________ Date: ___________________________
Appendix 21 - School of Education
Ethical Approval Application Form

The ethical approval application form must contain answers to all the questions indicated in the boxes below, if they do not apply please state why.

SECTION 1 Student Details /Identification of the person responsible for the research

<table>
<thead>
<tr>
<th>Name of Student:</th>
<th>[researcher]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student ID (quoted on library/swipe card):</td>
<td>7035643</td>
</tr>
<tr>
<td>Email Address:</td>
<td><a href="mailto:researcher@live.co.uk">researcher@live.co.uk</a></td>
</tr>
<tr>
<td>Name of Supervisor:</td>
<td>Dr. Cathy Atkinson</td>
</tr>
<tr>
<td>Programme (PhD, Prof Doc, MEd, PGCE, MSc, BA etc):</td>
<td>D.Ed.Ch.Psychol.</td>
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<tr>
<td>Year of Study</td>
<td>2</td>
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<tr>
<td>Full/Part-time</td>
<td>Full-time</td>
</tr>
<tr>
<td>Title of Project:</td>
<td>Evaluating the impact of mindfulness attention state training on typically developing Primary School aged pupils’ attention and academic proxy measures</td>
</tr>
<tr>
<td>Project Start and End Dates:</td>
<td>September 2013 – July 2014 (anticipated)</td>
</tr>
<tr>
<td>Location(s) where the project will be carried out:</td>
<td>Mill Hill Primary Academy; Harry Close Primary Academy</td>
</tr>
<tr>
<td>No risk, or acceptable levels of risk (measures documented)</td>
<td>Medium risk</td>
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<tr>
<td>Student Signature:</td>
<td>[Signature]</td>
</tr>
<tr>
<td>Supervisor Signature:</td>
<td>** Supervisor signature confirms that the student has the relevant experience, knowledge and skills to carry out the study in an appropriate manner</td>
</tr>
<tr>
<td>Date:</td>
<td>**</td>
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</table>

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2. **Aims and Objectives of the Project**

A. **Provide a statement of your research aims and objectives including research questions.**

The aim of the researcher’s thesis is to evaluate the impact of mindfulness attention state training (MAST) on typically developing Primary School aged pupils’ attention and academic proxy measures. The research questions (RQs) are as follows:

**RQ1. Does MAST for typically developing Primary School aged children improve their attention?**

**RQ2. Does MAST lead to an improvement in typically developing Primary School aged children’s academic proxy measures?**

**RQ3. What aspects of MAST are perceived to be beneficial/non-beneficial by typically developing Primary School aged children and their teachers?**

B. **What is the justification for the research? (why is it an area of importance/ has any similar research been done)**

The knowledge gap that the researcher’s thesis intends to fill is with regards to the use of attention state training for typically developing Primary School aged children, and the impact that this can have on their attention and on their academic proxy measures.

In terms of attention state training, the researcher was unable to locate any literature that has used attention state training, such as meditation or mindfulness, with typically developing children in Primary Schools, for the purpose of improving attention and pupils’ academic proxy measures. Thus, the type of attention state training that the researcher would like to use in Primary Schools is MAST (see van de Weijer-Bergsma et al., op. cit.; van der Oord et al., op. cit.; Kozasa et al., op. cit.; Baijal & Gupta, op. cit.), whereby Williams and Penman (2011) offer practical suggestions as to the mindfulness techniques that could be used.

C. **What are the main ethical issues and what steps will be taken to address them?**

As assessed in the Research Risk and Ethics Assessment (see Appendix 20), the only criteria which make the researcher’s thesis proposal medium risk is that the research will involve ‘primary research involving children…which involves direct contact with participants’, as the researcher aims to recruit two Year-4 classes of pupils (and their teachers) and later hold a Focus Group with a small number of pupils from each of the two classes, and ‘requires specific training and this is scheduled to be completed before fieldwork starts’, as the researcher intends to train the teachers on how to deliver MAST to their pupils.

The steps that will be taken to address the above are that the researcher, a trainee educational and child psychologist, holds an Enhanced Disclosure from the Criminal Records Bureau (Disclosure Number: 001365863772) and is thus eligible to work directly with children. Furthermore, even once the researcher has gained consent from a mindfulness teacher (see Appendices 8 & 9), and gained consent from two Year-4 teachers (see Appendices 10 & 11), the researcher will look to gain consent from the pupils’ parents/carers (see Appendices 13, 14, 15 & 16), and will also look to gain assent from the pupils themselves (see Appendix 17).
Thus, if either the pupils’ parents/ carers don’t wish for their child to take part in the research, or if the pupil themselves doesn’t want to take part in the research, the researcher will have made a contingency plan for this possibility by arranging for a Teaching Assistant to come and complete other fun work with these pupils outside of the classroom where MAST will be taking place.

As the researcher has proposed that the two teachers delivering MAST do so for 1-hour per week, the Teaching Assistant will not have to support these pupils for a vast or unmanageable amount of time.

Furthermore, once the MAST has finished in both groups (after 8-weeks of intervention), the researcher will ask the teachers to select a small group of their pupils who they feel would like to take part in a Focus Group with the researcher. Again, of the pupils who the teacher suggests, the researcher will again ask the pupils to give their assent (see Appendix 19), and will only conduct the Focus Group with the pupils who are happy to take part and whose parents/ carers are happy for them to take part.

The researcher will also personally train the two teachers on how to deliver MAST to their pupils, will provide them with weekly supervision, and will observe them delivering one session per week.

2. Methodology

A. Please outline the design and methodology of the project, including the methods of data collection and the methods of data analysis and the theoretical framework that informs it.

The epistemological position of the thesis is critical realism (Robson, 2002; p. 41).

A mixed methods design with a quasi-experimental intervention cross over will be used to evaluate the impact of MAST on typically developing Primary School aged children’s attention and academic proxy measures. Two classes of Year-4 pupils, and their teachers, will be randomly assigned to one of two conditions: an experimental condition and a waitlist control group (WCG; for justification of the researcher’s decision to use Year-4 pupils, see Data access), whereby both teachers will be trained to deliver MAST using materials provided by the researcher.

Mixed methods designs are ‘necessary to uncover information and perspective, increase corroboration of the data, and render less biased and more accurate conclusions’ (Reams & Twale, 2008; p. 133). As suggested by Onwuegbuzie and Leech (2005), quantitative methods will be used for confirmatory means to answer RQ1 and RQ2, and qualitative methods will then be used for exploratory means to answer RQ3 (p. 382).

It is the researcher’s intention to answer RQ1 by having both the experimental teacher and the waitlist control teacher complete an Attention Checklist (Das, op. cit.; see Appendix 1) for each of their pupils at a number of time-points (see below). The feasibility of administering the Attention Checklist (Das, op. cit.; see Appendix 1) to parents/ carers is also being considered. In terms of linking the Attention Checklist (Das, op. cit.; see Appendix 1) to the literature discussed above and the researcher’s findings from their Assignment 1 pilot study, as the researcher hypothesises that MAST will improve the efficiency of the neural substrates underlying suppressing and sustaining attention, and given that the researcher’s Assignment 1 pilot study found that typically developing Primary School aged children most commonly use, and the Primary School curriculum most commonly demands, suppressing and sustaining attention, it would be sensible to select an attention outcome measure that is sensitive to both the components of attention that MAST is hypothesised to target, and the components of
attention that children use most frequently and that their curriculum makes most demands on. Thus, having assessed a number of attention outcome measures, the Attention Checklist (Das, op. cit.; see Appendix 1) is high in face validity in terms of assessing supressing and sustaining attention, as questions two, three, four, eight and 12 assess supressing attention; questions one, five, six, seven, nine and 11 assess sustaining attention; and, question 10 assesses both supressing and sustaining attention.

It is also the researcher’s intention to answer RQ1 by administering the Inhibition subtest on the NEPSY-II (Korkman, Kirk & Kemp, 2007) to all experimental and control pupils at a number of time-points (see below). In terms of linking the Inhibition subtest on the NEPSY-II UK to the literature discussed above and the researcher’s findings from their Assignment 1 pilot study, again as the researcher hypothesises that MAST will improve the efficiency of the neural substrates underlying supressing and sustaining attention, and given that the researcher’s Assignment 1 pilot study found that typically developing Primary School aged children most commonly use, and the Primary School curriculum most commonly demands, supressing and sustaining attention, the Inhibition subtest on the NEPSY-II UK will allow a standardised and norm-referenced measure of pupil’s ability to sustain their attention throughout the subtest and suppress any prepotent responses during the ‘inhibition’ and ‘switching’ sections of the Inhibition subtest.

It is the researcher’s intention to answer RQ2 by having both the experimental teacher and the waitlist control teacher complete two teacher questionnaires for each of their pupils. The first of the teacher questionnaires assesses the pupils’ most recent half-termly National Curriculum levels of attainment and the progress that they are making towards the next sub-level of progress in terms of the number of criteria the pupil has met (DfE, 2013; see Appendix 3). This will allow the author to sensitively code each pupil’s levels of progress, as there are a defined number of criteria (approximately 10 criteria per sub-level) that pupils have to achieve in order to achieve a given level of attainment. Furthermore, once a pupil has achieved a given level of attainment, they will start meeting criteria from the next level of progress until that too is achieved. Therefore, the author will code the pupils’ National Curriculum levels of attainment by adding together the number of criteria that the pupil will have met in order to achieve their current level of attainment, as well as any criteria they have met from the next level of attainment. The second of the teacher questionnaires assesses the quality of the pupils’ work produced over the last half-term in terms of the number of pieces of work marked as excellent, good, satisfactory or unsatisfactory (see Appendix 2). This will allow the author to sensitively code the quality of work produced by each pupil by coding an excellent as 4, a good as 3, a satisfactory as 2 and an unsatisfactory as 1.

It is the researcher’s intention to answer RQ3 using a semi-structured interview* with both teachers, and a FG** with a reduced number of pupils from each of the two groups (see below).

Because of this, the researcher will be using a quasi-mixed methods design, in that both quantitative data and qualitative data will be gathered, but won’t be integrated in answering the RQs (Teddlie & Tashakkori, 2009; p. 142).

*In using Cohen, Manion and Morrison (2008; p. 411-415) as guidance, the researcher’s decision to use a semi-structured interview, and to gather qualitative data, pertains to the fact that semi-structured interviews require greater participant involvement, and thus engender higher levels of participant motivation, than open-ended questionnaires, which will thus enable the two experimental teachers to say more about what aspects of MAST they perceived to be beneficial/ non-beneficial for their practice as a teacher/ their pupils. In comparison to an open-ended questionnaire, a semi-structured interview will also allow the researcher to probe more deeply into teachers’ answers and to follow up noteworthy comments with further questions. Furthermore, as a good amount of quantitative study will already have been carried out in relation to RQ1 and RQ2, a semi-structured interview will allow possible quantified benefits/ drawbacks of MAST to be validated, clarified and illustrated. The discussion questions that the
researcher will ask as part of the semi-structured interviews can be seen in Appendix 5, whereby the two teacher interviews will be audio recorded and partially transcribed.

**In using Barbour (2007) as guidance, the role of the researcher during a FG is to act as a moderator and prompt participants to talk amongst themselves, as well as pick up on/ explore differences in opinion and form a consensus (p. 2-3). According to Barbour (op. cit.), it can be argued that the only views expressed by participants will be those that are salient to them (p. 32), and that multiple voices can still be heard (p. 33), hence the validity of the data gathered in FGs is high. The researcher would like to gather more qualitative data by holding a FG with a small number of pupils from each of the groups and ascertain what aspects of MAST they perceived to be beneficial/ non-beneficial. The researcher will act as moderator by providing the participants with a FG topic guide (see Appendix 4), and by using the FG topic guide to encourage discussion. Furthermore, holding FGs with pre-acquainted participants can facilitate more rounded and reasoned responses to discussion questions. The two pupil FGs will be audio recorded and partially transcribed.

In terms of when the above data will be gathered, there will be four time-points: Baseline (i.e., pre-intervention for the experimental group; January 2014 to February 2014 half term); time-1 (i.e., post-intervention for the experimental group; pre-intervention for the WCG; February 2014 to April 2014 half term); time-2 (i.e., follow-up 1 for the experimental group; post-intervention for the WCG; April 2014 to May 2014 half term); and, time-3 (i.e., follow-up 2 for the experimental group; follow-up 1 for the WCG; May 2014 to July 2014 half term).

For the MAST intervention, the researcher feels that a suitable length of intervention would be 8-weeks and a suitable amount of time to spend on intervention would be 1-hour per week, i.e., 12-minutes of MAST per day or 1-hour of MAST per week. Not only does the researcher feel that this would be practicable for Primary Schools (given that time is always tight when delivering a packed National Curriculum), but this length of intervention and the time spent on intervention is largely in-line with the studies summarised in the ‘Literature: Thesis proposal’ section above, whereby the modal length of intervention was 8-weeks and the modal time spent on intervention was 1-hour per week. This means that the intervention in the experimental conditions will last for 6-weeks between baseline and time-1 and for 2-weeks in time-2.

During baseline, the experimental teacher will be trained by the researcher on how to deliver either MAST to their pupils. Then, during time-1, the waitlist teacher will be trained by the researcher on how to deliver either MAST to their pupils. Weekly supervision will be provided by the researcher to the teachers whilst they deliver MAST to their pupils. The researcher will also observe each of the teachers delivering one session of MAST every week for the 8-weeks of intervention for the purpose of fidelity checking.

In order for a clear link to be made between the implementation of MAST and the abovementioned outcome measures, Cohen et al. (op. cit.) suggest that randomized control trials have “considerable potency in establishing causation” (p. 66) due to the ability of the researcher to isolate and manipulate a single independent variable and evaluate its impact on the outcome measures. However, in the context of the present ‘real world’ educational research, if the researcher was to train one of the Year-4 class teachers to deliver MAST to their pupils for 1-hour per week for 8-weeks, whilst the other Year-4 teacher continued teaching as normal and acted as a pure WCG, whilst this would constitute the manipulation of a single independent variable, i.e., the provision of MAST for the experimental pupils, any differences in outcome measures between the two groups could not only be attributed to the 1-hour of MAST received by the experimental pupils, but the putative psychological effects that such an intervention has on the experimental teacher, e.g., changing their overall approach to the teaching of their class due to the input that they have received from the researcher. This is known as the Hawthorne effect and, in experimental terms, can “[oversimplify] the variables at work in a situation[,] override the influence of mediating or process variables[,] neglect participants’ motives and motivations [and] neglect the context in which the action is located” (Cohen et al., op. cit.; p.
Thus, in an attempt to reduce the Hawthorne effect, the researcher has decided to use a mixed-methods design with a quasi-experimental intervention cross over to control for the Hawthorne effect so that both teacher receive the same input from the researcher and deliver MAST to their pupils, but at different times so as to allow for necessary between group statistical analyses as well as within group statistical analyses. Whilst the author has made clear the attempt that they will make to try and control the Hawthorne effect, the researcher acknowledges that beyond a quasi-experimental intervention cross over, the researcher’s thesis will still be subject to some Hawthorne effects which will be duly noted in the limitations of MAST intervention.

B. A description of the research procedures/activities as they affect the study participant and any other parties involved.

The research procedures/activities that the two Year-4 teachers will be involved in are: providing consent to take part in the research; being trained for approximately 2- to 4-hours on how to deliver MAST; delivering MAST for 1-hour per week for 8-weeks using material provided by the researcher; completing an Attention Checklist (see Appendix 1) and two teacher questionnaires regarding levels of attainment (see Appendices 2 & 3) for each of their pupils during the four time-points listed above; and, taking part in a 1-hour semi-structured interview (see Appendix 5) regarding their experience of delivering MAST to their pupils.

The researcher is still exploring the research procedures/activities that the parents/carers of the Year-4 pupils may be involved in are, but will definitely consist of: providing consent for their children to take part in the research; and, for the parents/carers of the pupils selected to take part in the Focus Groups, again giving consent for their child to take part in the research. Parents and carers may also be asked to complete an Attention Checklist (see Appendix 1) for their child at the four time-points listed above.

The research procedures/activities that the two classes of Year-4 pupils will be involved in are: giving their assent to take part in the research (see Appendix 17); receiving 1-hour of MAST per week for 8-weeks; for the pupils selected to take part in the Focus Group, giving their assent to take part in the Focus Group (see Appendix 17); and, for the pupils selected to take part in the Focus Group, being involved in a group discussion, moderated by the researcher, for approximately 1-hour (see Appendix 4).

C. Please state your experience in conducting the research procedures/ activities and provide supporting evidence.

The researcher does not have any experience of training teachers on how to deliver MAST. However, as a trainee educational and child psychologist, the researcher is familiar with working with teachers and providing resources, as well as necessary training on how to use the resources.

The researcher has experience of administering questionnaires to teachers and parents/carers within their role as a trainee educational and child psychologist, but because of the confidential nature of the researcher’s work, is unable to provide evidence due to the sensitivity of their casework.

The researcher has no experience of conducting a semi-structured interview with teachers, but does have experience of conducting a Focus Group with a group of four teachers as part of their Assignment 1 (the pilot study that feeds into the researcher’s thesis proposal), and is able to provide an anonymised transcript of the Focus Group as evidence (see SoE Ethical Approval Application Form, evidence 1).
Thus, whilst the researcher doesn’t have experience of conducting a Focus Group with Year-4 pupils, the researcher, as a trainee educational and child psychologist, does have experience of working with groups of Primary School children, and given the above competence in holding a Focus Group with four teachers, will be competent when holding a Focus Group with a small group of Year-4 pupils.

**Attach copies of any draft instrument / interview guide / screen prints, and so on.**

### 3. **Participants**

**A.** Give the number of participants; sex; age group and location

Two Year-4 teachers; approximately 60 Year-4 pupils; and possibly 60 parents/carers.

The sex of the participants (i.e., teachers, pupils, and possibly parents) will be both male and female.

The age group of the teachers will be between 21 and 68. The age group of the pupils will be between 8 and 9. The age group of the parents and carers could range between 20 and 80.

The names of the two Primary Schools from which the researcher will recruit their participants are Mill Hill Primary Academy and Harry Close Primary Academy.

**B.** Will your project include participants from any of the following groups? (Tick as appropriate)

- □ Children under 16
- □ Adults with learning difficulties
- □ Adults with mental illness
- □ Those who could be considered to have a particularly dependent relationship with the researcher
- □ Prisoners
- □ Young Offenders
- □ Other vulnerable groups (please detail)

**C.** If your project includes vulnerable populations please explain why it is necessary to include them in your study, including measures you will take to avoid coercion.

As mentioned above, the researcher’s only contact with the Year-4 pupils will be during the Focus Group, and coercion will be avoided by sticking rigidly to the Focus Group topic guide (see Appendix 4), whereby only facilitating language will be used between such questions.

### 4. **Recruitment (please append any advertisement you will use)**

**A.** How will potential participants be:

- i) Identified
- ii) Approached and Recruited
Following a meeting with the executive headteacher of the two Primary Schools named above, in which consent will hopefully be gained from a mindfulness teacher (see Appendices 8 & 9), two Year-4 teachers will be identified and, following a meeting with the researcher, providing that they consent to take part in the research (see Appendices 10 & 11), consent will be sought from the parents/carers of the teacher’s Year-4 pupils (see Appendices 13, 14, 15 & 16), and providing that they consent for their child to take part in the research, assent will be sought from the Year-4 pupils themselves (see Appendix 17).

B. How will your recruitment policy avoid putting any overt or covert pressure on the individual to consent?

Due to the executive headteacher actively commissioning trainee educational and child psychologists to undertake research within their two Primary Schools, no overt or covert pressure will be placed on them to consent to the research.

Due to the two Primary Schools having five or six Year-4 teachers between them, there will be no pressure put on individual teachers to consent to take part in the research, neither by the researcher nor by the executive headteacher, and they will be free to consent to take part in the research as they see fit.

Upon two Year-4 teachers consenting to take part in the research, the participant information sheet – parent/carer (see Appendix 13) will be sent to parents/carers, meaning that they will be allowed to make truly informed consent based on the research information.

C. How long will the participant have to decide whether to take part in the study?

The teachers will have approximately 1-month to decide whether they would like to take part. The parents/carers will have approximately 1-month to decide whether they would like their child to take part. The pupils will have 1-week to decide whether they would like to take part.

D. State any payment or any other incentive that is being made to any study participant. Specify and state the level of payment to be made and/or the source of the funds/gift/free service to be used and the justification for it.

No incentives are being made.

5. **Risk and Safeguards**

Please outline any adverse effects or risks for participants

A. What is the potential for adverse effects of a physical nature; risks or hazards, pain, discomfort, distress, or inconvenience, to participants?

The inconvenience to teachers consists of around 31- to 33-hours investment over one academic year, in the form of 2- to 4-hours training on how to deliver MAST; 1-hour of MAST delivered per week for 8-weeks, i.e., 8-hours. Approximately 10-minutes per pupil for answering the Attention Checklist (see Appendix 1) and the two teacher levels of attainment questionnaires (see Appendices 2 & 3), i.e., 5-hours, at four time-points, i.e., 20-hours, and a 1-hour semi-structured interview.

The inconvenience to parents, if they are included in the research and if they choose to complete the Attention Checklist (see Appendix 1), will be approximately 5-minutes at four time-points, i.e., 20-minutes in total.
The inconvenience to pupils is 8-hours of MAST, and for two smaller groups of pupils, an additional 1-hour Focus Group.

B. Will any topics discussed (questionnaire, group discussion or individual interview) be sensitive, embarrassing or upsetting, or is it possible that criminal or other disclosures requiring action could take place during the project?

No.

C. What is the potential for adverse effects, risks or hazards, pain, discomfort, distress, or inconvenience, of a physical or psychological nature to you as the researcher?

None above and beyond the usual demands on a doctoral thesis.

D. What precautions have been taken to minimise or mitigate the risks identified above in A, B, C?

The risks to teachers will be minimised by providing weekly support and supervision. There are no risks to parents/ carers or pupils.

6. **Consent**

A. Detail how informed consent/ assent will be obtained.

See above – already discussed.

B. If the participants are to be recruited from a vulnerable groups (3B) give details of the extra steps taken to assure their protection.

Year-4 pupils will have the right to withdraw from the research at any time. However, the MAST activities will be designed to be fun and non-stressful, thus making their participation easier.

Attach draft Information Sheets & Consent Forms for each participant group.

7. **Data Protection and confidentiality**

A. Will the study use any of the following activities at any stage?

- [ ] Electronic transfer by email or computer networks
- [ ] Use of personal addresses, postcodes, faxes, e-mails or telephone numbers
- [ ] Publication of direct quotations from respondents
- [ ] Publication of data that might allow identification of individuals
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<th>Use of audio/visual recording devices</th>
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<td>Storage of personal data on any of the following:</td>
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**B. Please provide details on the measures you will employ to comply with the Data Protection Act and the University Data Protection Policy?**

Personal addresses, e.g., to post parents the Attention Checklist (see Appendix 1), will be accessed from a secure computer at the associated Primary School and will not be recorded on any other medium.

Direct quotations from the teachers (in their semi-structured interview) or from the pupils (from their Focus Group) will be fully anonymised, e.g., teacher-1; pupil-3; etc.

Audio recordings will be partially transcribed and fully anonymised. The original audio file will be kept on an encoded USB data stick until the transcription has taken place, at which point it will be deleted.

**C. What measures have been put in place to ensure confidentiality of personal data? Give details of whether any encryption or other anonymisation procedures have been used and at what stage?**

Any personal data will be saved on an encrypted USB data stick.

**D. Where will the analysis of the data from the study take place and by whom will it be undertaken?**

In the premises of the researcher, by the researcher, and all data will be saved on an encrypted USB data stick.

**E. Who will have control of and act as the custodian for the data generated by the study?**

The researcher.

**F. Who will have access to the data generated by the study?**

All participants, including the pupils’ parents, and the researcher,

**G. For how long will data from the study be stored?**

Until the completion of the researcher’s doctoral viva.
### 8) Reporting Arrangements

A. Please confirm that any adverse event will be reported to the Committee

Confirmed.

B. How is it intended the results of the study will be reported and disseminated? *(Tick as appropriate)*

- Peer reviewed scientific journals
- Internal report
- Conference presentation
- **Thesis/dissertation**
- Written feedback to research participants
- Presentation to participants or relevant community groups
- Other/none e.g. University Library

C. How will the results of research be made available to research participants and communities from which they are drawn?

Via e-mail.

D. What arrangements are in place for monitoring and auditing the conduct of the research?

The researcher will supervise the Year-4 teachers and, in turn, will be supervised both by the university and by their placement provider.

E. What are the criteria for electively stopping the research prematurely?

Pupil or teacher distress.

### 9. Sponsorship

Provide information on whether the study is in receipt of any external funding. Confirm who will act as sponsor of the research.

N/A.

### 10. Conflict of Interest

Have any conflicts of interest been identified in relation to this project?

No.
SECTION 3 - MINOR AMENDMENT TO RESEARCH PROJECT

Application for Approval of Minor Amendment¹ to a Research Study

Details of proposed amendment (please give as much detail as possible)

Relative to the above, the researcher now plans to gain consent from parents/ carers for information to be collected about their children. The rationale for this change is that all three Year-4 classes at Harry Close Primary Academy will receive the ‘Paws .b’ mindfulness programme, designed by the Mindfulness in Schools Project, at some point during the 2013/14 academic year as part of their Personal, Social, Health and Citizenship Education (PSHCE) curriculum. Furthermore, this change to the delivery of the PSHCE curriculum at Mill Hill Primary Academy was going to happen regardless of the researcher’s input. Therefore, for two of the three Year-4 classes, the researcher hopes to evaluate the impact of the ‘Paws .b’ mindfulness programme in exactly the same way as described above, using the same mixed methods design with a quasi-experimental intervention cross over. Hence why the researcher will be asking parents from these two classes to consent to information being collected about their children.

Upon discussing parental/ carer consent with Mrs Laura Beale, the Assistant Vice Principal at Harry Close Primary Academy who has responsibility for inclusion and special educational needs (SEN), she informed the researcher of parental language barriers and literacy difficulties (i.e., 98% of pupils at Harry Close Primary Academy have English as an additional language, or EAL, status and the many parents/ carers have literacy difficulties).

Mrs Laura Beale, along with all members of the senior leadership team, have therefore found, through years of experience within their community, that the most effective way to communicate new information with parents/ carers is to send parents/ carers an invitation to attend an information morning where interpreters will be employed. Then, during the information morning, staff can communicate, and have translated, the new information, and thus allow parents to communicate with staff through the interpreters. Furthermore, because of the employment demographic of parents/ carers at Harry Close Primary Academy, Mrs Laura Beale and other members of the senior leadership team have informed the researcher that the information mornings are very well attended.

Therefore, the researcher plans to hold such an information morning and allow parents who attend to consent to information being collected about their child. However, for those who do not attend, the researcher has amended the parent information sheet to reflect the above. The class teacher and MAST facilitator information sheets have also been amended to reflect the fact that Laura Beale will be delivering the Paws .b intervention to the two classes, whereby the class teachers will be asked to complete the outcome measures.

Supervisor Declaration

¹ Minor amendments are those that do not alter the character of the research or the participant groups.
I agree that the amendment proposed does not change the character of this research or the participant groups.

I confirm that the research risk assessment for the study as MEDIUM remains.

| Supervisor’s signature* | Date. |

Please send applications for amendment to ethical approval for MEDIUM risk research to the School Quality Assurance Administrator at ethics.education@manchester.ac.uk who will pass on the request to the RIC member who authorised the original application wherever possible.
Appendix 22 – FG transcript: Experimental group (Time-1, boys)

**Researcher:** Right, it’s recording now and I’ve just started my stopwatch so I’ll make sure that we don’t go over half-an-hour, okay? And you’ve all said that you are happy for me to record this conversation – is that correct?

**All:** Yes.

**Researcher:** And you’re all happy that I’m not going to identify who you are when I type the conversation up? It’s going to be anonymous – are you happy about that?

**All:** Yes.

**Researcher:** Good. Now, what I want you to do for the next 10-, 20-seconds is imagine that you are talking to a friend who goes to a different school. So not this school. Imagine that your friend had never heard of Paws .b. Just think about what you would tell this friend about Paws .b (10-second pause). And then we’ll go around, one-by-one, and you can say what you would tell your friend about Paws .b. So, what about you Rac20?

**Rac20:** You can try… it’s very good because you can try everything, because when you panic, you can always do the finger breathing and you will be calmer and calmer, and sometimes you can feel that it tickles.

**Researcher:** Brilliant. So you’d tell your friend that Paws .b would help calm them down doing something like finger breathing? Perfect. Far06, what would you tell your friend about Paws .b?

**Far06:** I’d tell them about FOFBOC: feet on floor and bottom on chair. It’s a kind of breathing technique and it will help you do much better at being mindful.

**Researcher:** Great. So the FOFBOC helps you be more mindful. Aur05, what would you tell your friend?
**Aur05:** (5-second pause). (Aur05 places one hand on their chest and one hand on their stomach).

**Researcher:** Do you mean the chest and tummy breathing, because I can see you putting your hands on your chest and your tummy? What would you tell them about it?

**Aur05:** It can be good because you do it (reference to chest and tummy breathing) and then you breathe and, like, it helps you to calm down.

**Researcher:** Oh right, it helps you to calm down. Brilliant. So, Ahm30, what would you tell your friend about Paws .b?

**Ahm30:** I’d do the chest breathing and say that when you panic and when you do it you’ll feel a lot more relaxed and calm. And then, you might be able to, when you’re in bed and you’re moving around and you can’t get to sleep, try and do it (reference to chest and tummy breathing) and then you might calm down.

**Researcher:** Right, so you found that it helped you go to sleep and that’s what you’d tell your friend? Okay. Before we move on to the next question, is there anything else that any of you would like to tell your friend about Paws .b?

**Rac20:** When you do the chest breathing, if you ever eat lots of stuff and it gets stuck in your stomach, you can just do this (Rac20 places their hand on their stomach) and press down and then it might go fall down.

**Researcher:** Right. So it makes your stomach feel lighter. Is there anything else that any of you would like to tell your friend about Paws .b? Go on Far06.

**Far06:** You can do the chest and tummy breathing technique and it will calm you down more, and if you feel angry, you can do breathing for one big breathe, for like 20-seconds, and you’ll calm down.

**Researcher:** Aur05, you go on.
**Aur05:** You can use the finger breathing and it calms you down. If you do it 10 times then you might feel calm.

**Researcher:** Great. So, we’re going to move on. That was just a little introduction to get you thinking. Now I’m going to give you this face chart. Now, as you can see, there are three different faces. On the left with the red box above it there’s an unhappy face and below it, it says, “I didn’t like Paws .b”. In the middle there’s a neutral face: a face that doesn’t show anything, and it had an orange box above it, and underneath it, it says, “Paws .b was okay”. The face on the right is a really happy, smiley face and it has a green box above it and underneath it, it says, “I liked Paws .b”. Without looking at each other, can you tick the box that shows how you felt about Paws .b?

*** 15-SECOND PAUSE FOR PUPILS TO COMPLETE THE BOX TICKING EXERCISE  ***

**Researcher:** So, Rac20, which box did you tick?

**Rac20:** “I liked Paws .b”.

**Researcher:** Aur05, which box did you tick?

**Aur05:** “I liked Paws .b”.

**Researcher:** Far06, which box did you tick?

**Far06:** “I liked Paws .b”.

**Researcher:** And then Ahm30, which box did you tick?

**Ahm30:** “I liked Paws .b”.

**Researcher:** So you all liked Paws .b?

**All:** Yes.
**Researcher:** Brilliant. So, now just take 10- or 20-seconds to think about what you liked about Paws .b. And when you’re ready, we can go round one-by-one again and then afterwards we can all have a big group chat (10-second pause). So, Aur05, what did you like about Paws .b?

**Aur05:** The chest and tummy breathing…(5-second pause).

**Researcher:** Brilliant. Rac20, what did you like about Paws .b.

**Rac20:** I liked the torch…

**Researcher:** Do you mean the ‘searchlight of attention’?

**Rac20:** Yes, because I was good at it.

**Researcher:** Brilliant. Far06, what did you like about Paws .b?

**Far06:** I liked how they teach about the brain.

**Researcher:** Fantastic. Ahm30, what did you like about Paws .b?

**Ahm30:** I liked the chest breathing because when I feel uncomfortable, you just do it and you feel comfortable and you stop panicking.

**Researcher:** Okay. So what does everyone think, because Ahm30, you said that you liked the chest and the tummy breathing, and Aur05 you said that you liked the chest and the tummy breathing. What does everyone else think?

**Rac20:** Because when you do this (Rac20 puts their hand on their stomach), it tickles you and…

**Ahm30:** It feels good.
Aur05: And when you do it, you calm down, that’s why.

Researcher: Okay, so is that (reference to chest and tummy breathing) the Paws .b practice that you all liked the best then?

Rac20: Yeah.

Aur05: Yeah.

Ahm30: Yeah.

Researcher: Far06, which Paws .b practice did you like the best?

Far06: The chest and tummy breathing.

Rac20: Everyone likes it.

Researcher: So did you think that everyone in your class liked it?

Rac20: No.

Aur05: Nahh.

Far06: Some people liked the finger breathing.

Ahm30: And the FOFBOC.

Rac20: Some people fidget.

Far06: Others liked the FOFBOC.

Researcher: So different people liked different practices, but you all liked chest and tummy breathing?
**All:** Yeah.

**Researcher:** Far06, you mentioned that you liked being taught about the brain. What do you think everyone thought about being taught about the brain?

**Far06:** It was quite fun because it was the first time that we’ve been learning about the brain.

**Rac20:** And we made one (reference to a model of the brain made up of pupils playing different roles).

**Far06:** Yeah, we made one (reference to a model of the brain made up of pupils playing different roles).

**Rac20:** I was the hippocampus.

**Far06:** I was the hippocampus at the other side.

**Aur05:** I was the insula.

**Researcher:** Ahm30, can you remember what you were?

**Rac20:** Ahm30 was the prefrontal cortex.

**Aur05:** Actually, I was the prefrontal cortex…

**Researcher:** So you liked the different activities in Paws .b?

**All:** Yeah.

**Far06:** We looked inside the brain.

**Rac20:** Yeah.

**Far06:** Mrs. Beale brought a real brain in.
Rac20: It was plastic. But was saw the prefrontal cortex and the insula in action because if there’s a monster and it puts us into action.

Far06: That’s the amygdala.

Ahm30: The panic button.

Aur05: You press the panic button.

Researcher: So what you’re all saying is that Paws .b has taught you something new as well?

All: Yeah.

Researcher: So it’s taught you how to do mindfulness practices like chest and tummy breathing, finger breathing, and FOFBOC, but you feel like you’ve learnt about the brain as well. Is that right?

All: Yeah.

Researcher: Oh right. Go on Aur05.

Aur05: When I did the FOFBOC, when I was doing it, my feet went hot and I was active, and it did work.

Ahm30: When I did the FOFBOC, I felt like I wanted to wake up because I really felt comfortable.

Rac20: Because you feel dizzy like this (demonstrates feeling dizzy).

Ahm30: Yeah and then when you open your eyes you feel more relaxed and it’s like your brain is sleeping.
**Researcher:** Okay. So how did you feel after you did a mindfulness exercise? How did you feel afterwards?

**Far06:** Calm.

**Ahm30:** I felt a bit sad because mindfulness had ended.

**Aur05:** I felt sleepy.

**Rac20:** Yeah.

**Researcher:** What were you going to say Aur05?

**Aur05:** My whole body was hot.

**Researcher:** Ahm30, you said that you felt sad when Paws .b stopped. Does that mean that you really liked it then?

**All:** Yeah.

**Ahm30:** Because when I got home I wanted to learn more and I wanted to relax even more.

**Far06:** One of my brothers taught me at home.

**Rac20:** I want to learn how to do the body scan.

**Researcher:** Well that’s something that we’re going to come on to at the end about whether there is anything that you could improve about Paws .b, so Rac20 you remember that you would like to do a body scan as part of Paws .b. So, before we move on, was there anything else that you liked about Paws .b?

**Rac20:** Erm, we saw funny movies.

**Far06:** We liked the videos.
Rac20: The videos, they were funny.

Aur05: The chicken! (laughs)

Far06: And the boy that was like, “I want those sweets! Give those sweets! Wahh! Wahh!”

Researcher: Thank you Far06. So, let me know if I’ve got this right. It seems like there are three things: You liked doing the Paws..b practices, you got to learn new things…

Far06: Like flight, fight and freeze.

Researcher: Exactly Far06, like flight, fight and freeze, and you got to learn about all the bits of the brain. Then for the third thing, you had fun – you thought the videos were funny.

Rac20: Yes, but they (reference to the videos) helped us.

Ahm30: Yes, they (reference to the videos) helped us.

Researcher: Okay, so is there anything else that you liked about Paws..b before we move on to another question?

Rac20: I liked that we got to learn about the snowball.

Far06: Yeah, where it rolls down the hill and gets bigger and bigger.

Aur05: You know when my dad went work yeah, I was always panicking and I was in danger or something, but then when he came home I wasn’t panicking.

Researcher: Okay Aur05, so do you feel that mindfulness helped you panic less about your dad was at work?

Aur05: Yeah.
Researcher: Okay. Now I think it’s a good time to move on to the next question. Now I know that all four of you said that you liked Paws .b, but was there anything that you didn’t like?

Far06: About the closing our eyes.

Rac20: People were closing their eyes and then opening them.

Aur05: Because, like, your eyes, they can’t always stay closed.

Rac20: We wanted to open them, so I just opened them and closed them back down.

Researcher: So you didn’t like being told that you had to close your eyes?

Rac20: It was aching because we had to do this (demonstrates closing eyes).

Ahm30: It was hard because your vision goes all blurry.

Rac20: And you can see dots everywhere.

Far06: Black dots.

Researcher: So you would you have preferred to have your eyes open but look at your feet?

All: Yeah.

Aur05: You know when you close your eyes for long, your eyes hurt and you feel like opening them.

Researcher: Okay, so what you’re saying is that you didn’t like that you had to close your eyes and that you might have preferred to lower your gaze and look at your feet, for example?

Far06: Yeah.
Aur05: If you look at your feet then you can still look.

Rac20: You can just do that (demonstrates lowering gaze, looking at feet and shielding eyes with hands).

Ahm30: But in mindfulness, in the ground rules, they say that you have to have to put your hands on your knees.

Researcher: So are you saying that you could change the ground rules and instead of saying, “close your eyes”, it could be, “close your eyes or lower your gaze”, and rather than saying, “empty hands”, it could be, “put your hands over your eyes”. So it was something about having to keep your eyes closed that you didn’t like?

All: Yeah.

Aur05: It made your eyes hurt.

Researcher: So how would you change the ground rules?

Ahm30: I’d change it so that rather than, “hands on your knees”, I’d do it as, “hands on your face”, and, “if you want you can keep your eyes closed or open”.

Rac20: Yeah.

Researcher: Okay, so you wanted the choice about keeping your eyes open or closed. Far06, what did you think about keeping your eyes closed?

Far06: It makes me dizzy and I want to vomit.

Researcher: So would you have rather kept your eyes open then?

Far06: Yah.
Researcher: Okay. Was there anything else that you didn’t like about Paws .b, apart from having to close your eyes?

Rac20: If we do with our hands (reference to shielding eyes with hands), your hands will ache.

Ahm30: But what if we put our arms there (demonstrates resting elbows on thighs), lower your eyes a bit, and put your hands like that (demonstrates shielding eyes with hands).

Rac20: Yeah.

Researcher: Right, well I can see what you’re all doing: You’re all putting your elbows on your thighs and then you’re leaning your head into your hands.

Rac20: Yeah.

Ahm30: Yeah.

Researcher: Alright. Well that can be added to the ‘improvement’ section about how you’d like your eyes to be during the Paws .b practices. Okay. So is there anything else that you didn’t like about Paws .b?

***5-SECOND PAUSE WITH NO PUPIL RESPONSES***

Researcher: Is that all from you Rac20?

Rac20: Yeah.

Researcher: Is that all from you Far06?

Far06: Yeah.

Researcher: Is that all from you Ahm30?
Ahm30: Yeah yeah yeah.

Researcher: Is that all from you Aur05?

Aur05: Yeah.

Researcher: Okay. So now, I want you to imagine that I’m the head teacher of a new primary school that’s opening up down the road. (Researcher changes tone of voice to help with head teacher characterisation) I’ve heard about Harry Close Primary Academy doing Paws .b and it sounds quite interesting to me. So, what can you tell me about Paws .b for my new school?

Ahm30: There are four types of Paws .b practices: FOFBOC; finger breathing; chest and tummy breathing…

Researcher: Can you remember the fourth?

Ahm30: The torch (reference to the searchlight of attention). Torch breathing.

Researcher: Okay. So my pupils are going to learn four different mindfulness techniques. Far06, what would you like to tell me?

Far06: There’s going to be six times that they’re going to do the mindfulness.

Researcher: Oh right, so there are six mindfulness lessons?

Rac20: You can do it every Monday and just ask Mrs. Beale because she did finger breathing with us.

Researcher: Alright. So did this Mrs. Beale do a good job?

Rac20: Yes, a very good job. She taught us the four techniques over the six lessons.

Researcher: Okay. Aur05, what can you tell me about Paws .b?
Aur05: It’s good because if your pupils are mad, you can just tell them to do it.

Researcher: Oh right, so it should help my pupils calm down?

Rac20: They won’t panic.

Researcher: Oh right. Are there any other ways that Paws .b would help my pupils?

Ahm30: If you get so many e-mail and you’re like, “I’ve got to do this! I’ve got to do this!”, you could try it and you might calm down.

Researcher: So I could try it Ahm30?

Ahm30: Yeah.

Researcher: Oh right.

Rac20: It’s like a snow globe that when you shake it, all of the snow goes around the globe, and if you calm down then the snow will just lay down.

Researcher: So if I was busy and panicking, that’s like me being stuck in the snow globe with the snow flying around me, but if I do mindfulness then that would help the snow to settle and get me to stop panicking?

Rac20: Yeah.

Researcher: Well that sounds nice. Is there anything else that you would like to tell me about Paws .b?

Rac20: They will laugh lots of times.

Researcher: Okay, so my pupils will laugh?
**Rac20:** Yes. If they were like me, and I don’t laugh, then they are going to laugh because Mrs. Beale has got a lot of good videos.

**Researcher:** Oh right. So my pupils are going to laugh and have a good time.

**Ahm30:** Researcher, they will have a good time.

**Researcher:** Okay. Far06, what would you like to tell me about Paws .b?

**Far06:** You can show them the videos and they will laugh and have fun.

**Researcher:** Okay.

**Ahm30:** Researcher, if your pupils have no sense of humour, if they watch the videos, they might have some humour.

**Researcher:** Brilliant. Are there any other ways that Paws .b can help my pupils?

**Ahm30:** It might help them at home as well. Like, if they’re panicking and their mum is telling them to “do this” and “do that”, and it’s their favourite (TV) show, and they start arguing, they might try mindfulness and it will calm them down and they might go do it.

**Researcher:** So Paws .b might help my pupils at school and at home as well?

**Ahm30:** Yeah.

**Researcher:** Brilliant. Aur05?

**Aur05:** You know if there is some angry people (reference to the researcher’s imaginary pupils), you can let them watch the video and it will teach them why they don’t do it.

**Researcher:** Right. Great. So, before we move on, is there anything else that you would like to tell me about Paws .b?
**Rac20:** Researcher, in one (Paws .b) lesson there’s a snow ball and it gets bigger and bigger as you panic, panic, panic, it gets bigger, bigger, bigger, and then it gets smaller when there’s a solution you just say, “pressed the wrong button, sorry, bye”.

**Far06:** You know the snow ball? Well, when it was small, you know a little bit of information about the thing that you’re going to say, and then when it gets bigger you know more and more and more. Then you get the right answer.

**Ahm30:** Researcher, if there’s any bullying in your class, if they calm down, they might stop bullying people.

**Researcher:** Oh right, so you think that Paws .b might help my pupils stop bullying each other.

**Aur05:** You can do it. You know, my baby, it nearly swallowed something and we took it out. If you do it (reference to the Paws .b practices), you’ve forgotten about it.

**Researcher:** Oh right, so Paws .b helps you deal with difficult situations?

**Aur05:** Yeah.

**Researcher:** Oh right, brilliant. So, we’ve got about 4-minutes, so we’re getting towards the end. The second to last question is this: Is there anything that can be improved about Paws .b? Now you’d already mentioned about wanting the choice between closing your eyes or lowering your gaze. Is there anything else that could be improved about Paws .b?

**Far06:** Change the name.

**Rac20:** Yeah.

**Ahm30:** Yeah.

**Rac20:** It should be ‘relaxing and calm’.
**Far06:** Like Paws .b sounds a dog paw.

**Ahm30:** Yeah. And we’re not talking about dogs.

**Researcher:** So you’d like to change the name.

**Far06:** Yeah.

**Rac20:** Relax and calm.

**Researcher:** Why would you like to change the name?

**Ahm30:** Because it sounds like we’re doing about dogs.

**Far06:** (laughs).

**Researcher:** Okay. So you don’t really understand why it’s called ‘paws’ .b, because it makes you think that you’re going to be doing something about dogs?

**All:** Yeah.

**Researcher:** Okay then. **Aur05**?

**Aur05:** If we go to other schools then we tell them about Paws .b, they will think that we’re doing about dogs.

**Rac20:** They will just laugh. They will just laugh.

**Researcher:** What do you think would be a good name for it (reference to Paws .b) then?

**Far06:** ‘Relax .b’.

**Rac20:** ‘Relax. Peace’.
Researcher: So, I can see that you didn’t understand why they used ‘paws’, but did you understand ‘.b’, as in stop and be, as in enjoy being present?

Aur05: No, it should be what Rac20 said.

Researcher: So you didn’t understand the ‘.b’ bit either?

All: No.

Researcher: So are you all saying that you didn’t understand the name at all?

All: Yes.

Researcher: So you think that something to do with ‘relaxing’ would be a better name.

Rac20: Yeah, something to do with relaxing.

Far06: Yep.

Ahm30: It could be called, ‘Relax. Have peace’.

Far06: ‘Calm .b’.

Rac20: Yeah! ‘Calm .b’!

Researcher: Okay, so would you understand the ‘.b’ part if there was a word like ‘calm’ before it?

All: Yeah.

Far06: Or ‘.b Calm’.

Rac20: Yeah.
**Researcher:** Okay. So is there anything else about Paws .b that could be improved?

**Ahm30:** No, we liked everything else.

**Researcher:** Does everybody agree with Ahm30?

**All:** Yeah.

**Researcher:** Okay. Well, that’s it. We’re coming up to 30-minutes now. Thank you very much everyone and I’ll stop recording now.
Did you like paws .b?

Please put a tick above one face.

- I didn’t like Paws .b
- Paws .b was okay
- I liked Paws .b
Did you like paws.b?

Please put a tick above one face.

I liked paws.b

Paws.b was okay

I didn’t like paws.b
Did you like paws.b?

Please put a tick above one face.

I liked Paws.b

Paws.b was okay

I didn’t like Paws.b
Did you like paws .b?

Please put a tick above one face.

I liked Paws .b

Paws .b was okay

I didn’t like Paws .b
Appendix 24 – FG transcript: Experimental group (Time-1, girls)

Researcher: Okay everyone. I’m starting the stopwatch now to make sure that we don’t go over half-an-hour. You’ve all said that you’re happy for me to record this conversation – is that right?

All: Yes.

Researcher: And you’re happy that when I write up the conversation, it will be anonymous?

All: Yes.

Researcher: Great stuff. So, to start off, I want you to imagine that you have a friend who goes to a different primary school. Take about 10- or 20-seconds to think what you would tell this friend about Paws .b.

*** 15-second pause ***

Researcher: And then when you know what you would like to say to this friend about Paws .b, if you put your hand up then we can go around one-by-one. Okay then Adn20, what would you tell this friend?

Adn20: I would say that it’s (reference to Paws .b) mindfulness that we do at our school and it’s something that keeps us calm and relaxed.

Researcher: Right. Brilliant. Would anybody like to add anything else? Ham01, what would you tell your friend?

Ham01: I would say the same thing as Ahm20, and I would say that “if your school doesn’t do it (reference to Paws .b), you can come and do mindfulness with us”.

Researcher: That’s a lovely idea. Waj03, what would you tell this friend?
**Waj03:** Erm, my friend, I would tell her that mindfulness is very good for you. For example, at the start of mindfulness, you think, “oh my gosh, I have a headache” and stuff, and then after you’ve done mindfulness, you actually feel relaxed and calm.

**Researcher:** So you felt so relaxed after mindfulness that it got rid of your headache?

**Waj03:** Yeah.

**Researcher:** Wow. **Ahm04**, what would you say to your friend about Paws .b?

**Ahm04:** It’s (reference to Paws .b) really relaxing because you can... It’s kind of like sleeping but feeling the sensations in your body.

**Researcher:** Right. Brilliant. Is there anything else that any of you would like to say to your friends about Paws .b? **Adn20**?

**Adn20:** She (reference to an actual friend at a different primary school) didn’t even know what mindfulness was, but when she found out about it she started to research about it.

**Researcher:** Right. So your friend actually started to research about Paws .b? Fantastic. **Ahm04**, what would you tell your friend about Paws .b?

**Ahm04:** I would tell her to “come to Harry Close (Primary Academy) because it is a good school and you should try mindfulness because it calms you down”.

**Researcher:** Fantastic. What would you tell your friend **Ham01**?

**Ham01:** I would say what everyone else has said, but I would say that I had loads and loads of problems and then when we did mindfulness my situations went away and I felt kind of calm.

**Researcher:** So it actually helped you manage certain difficult situations?

**Ham01:** Yep.
Researcher: Wow. Waj03?

Waj03: I felt that first of all, for example, I felt so annoyed because I get so annoyed at play time with my friends and with my cousin and after that, when I do mindfulness, I feel like, “I don’t want to do this anymore. It’s so boring.” But after we do it (reference to Paws .b), it actually feels relaxing.

Researcher: Right. So you actually changed your mind about mindfulness? Interesting. So, is there anything else that any of you would like to say to your friends about Paws .b? Yes Ahm04?

Ahm04: It would be really boring closing your eyes for a long time, but it would be relaxing.

Researcher: Oh right. Yes Waj03?

Waj03: I would tell my imaginary friend, for example, that normally, at school, first of all when they sent a letter home and that, and, “does my child want to do mindfulness?”, I never knew what it (reference to Paws .b) was and I think that our school is very lucky to do mindfulness and I don’t think other schools get to do mindfulness.

Researcher: I think that’s true – other schools don’t get the chance to do mindfulness, so you’d tell your imaginary friend how lucky you feel because your school got to do mindfulness?

Waj03: Yeah.

Researcher: Right. Ham01?

Han01: I would say that when you do mindfulness, you feel kind of relaxed and you forget about everything that’s happened. It’s like a year has happened and then you’ve just forgotten about it.
Researcher: Okay. So that was an introduction for us all. Now if you look at this face chart. On the left there is a sad looking face with a red box on the top and underneath it says, “I didn’t like Paws .b”. In the middle there’s a neutral face – a blank face with an orange box on the top and underneath it says, “Paws .b was okay”. On the right hand side there’s a happy face with a green box on the top and underneath it says, “I liked Paws .b”. Without looking at each other’s answers, will you put a tick in the box that shows how you felt about Paws .b?

*** 10-SECOND PAUSE FOR PUPILS TO COMPLETE THE ACTIVITY ***

Researcher: Right, so if you all show me your face charts at the same time. Waj03, you ticked, “I like Paws .b”. Ham01, you ticked, “I liked Paws .b”. Adn20, you ticked, “I liked Paws .b”. And then Ahm04, you ticked, “I liked Paws .b”. So you all liked Paws .b?

All: Yeah.

Researcher: Brilliant. So what did you like about Paws .b? We’ll go around one-by-one. Ham01?

Ham01: I liked Paws .b because it was very calming.

Researcher: Right. Is there anything else that anyone would like to add? Waj03?

Waj03: First of all, when I felt frustrated or “I don’t feel like doing it”, it (reference to Paws .b) makes you feel calm and it makes you forget all the stuff that has happened in the past.

Researcher: Very interesting. Ahm04, what did you like about Paws .b?

Ahm04: It makes you feel relaxed and there are funny video clips that we watched.

Ham01: Oh yeah, the funny video clips…

Adn20: Yeah.

Researcher: So you all liked the funny video clips?
All: Yeah.

Researcher: What else did you like about Paws .b?

Adn20: What I liked about Paws .b was that it was quite calm and relaxing. It felt like that afterwards. A calm place where no one could distract me.

Researcher: Right. So you felt like you were in a different place where no one could distract you? How does everyone feel about what Adn20 said?

Waj03: I felt like I was in my imaginary friend’s house – a calm place.

Researcher: Ham01?

Ham01: I felt like I was somewhere else like my best friend’s house or my cousin’s house or a magical place.

Researcher: Brilliant. Is there anything else that any of you liked about Paws .b? Yes Waj03?

Waj03: What I really liked about Paws .b is that you get to watch funny video clips and also, for example, I have bad, very very bad stomach pains, and after you’ve done all of the mindfulness, Paws .b, you feel like, “Oh my gosh – I feel like doing it all again”.

Researcher: Right. So did Paws .b help with your pains in your stomach Waj03?

Waj03: Yeah.

Researcher: Wow. Okay. Did anyone else feel like that – that you wanted to keep doing mindfulness practices?

All: Yes.
Researcher: Right. I can see that you’re all nodding. Amh04, what else did you like about Paws.b?

Amh04: I liked the FOFBOC exercise.

Researcher: Right. Did anyone else like the FOFBOC as well?

Ham01: Yeah.

Waj03: I liked +2.

Researcher: Right. So Ahm04 and Ham01, your favourite was the FOFBOC. Waj03, your favourite was the +2. Adn20, which was your favourite mindfulness practice?

Adn20: I liked the chest and tummy breathing.

Researcher: Right. That’s interesting. So you all liked different mindfulness practices. So even though you all liked different mindfulness practices, do you think that it was a good thing that you got to try different mindfulness practices?

Waj03: Yeah.

Ham01: Yeah.

Adn20: (Nods).

Ahm04: Yes, because then we could find out which ones we liked and which ones we found harder. Because I found the +2 very very hard.

Researcher: Well that’s a good point Ahm04, because when you di different mindfulness practices you can find out which one you liked the best. Do you all agree with that?

All: Yeah.
**Researcher:** So I’ve not heard anyone mention the finger breathing. What did everyone think of the finger breathing?

**Waj03:** I thought that it was *okay*, but I liked the +2 better, and the FOFBOC, that was okay, and the chest and tummy breathing, I liked that.

**Researcher:** Okay. **Ham01,** what did you think about finger breathing?

**Ham01:** Finger breathing was good because then I know how long it takes for my breaths in and out because I don’t actually know that.

**Researcher:** Very good. **Ahm04,** what did you think about finger breathing?

**Ahm04:** I hated it (reference to finger breathing) because when you’re relaxing you don’t have to do anything – not even put your hand up – and my hand was aching so much.

**Waj03:** (Laughs).

**Ham01:** That’s actually true.

**Ahm04:** It was hard to relax.

**Researcher:** Okay. So your hands ached when you did finger breathing?

**All:** Yes.

**Researcher:** Oh right. **Adn20,** what did you think about finger breathing?

**Adn20:** I was in the middle because in the first two (Paws .b) lessons my hand felt quite itchy. But then when I let it go I felt quite relaxed.

**Researcher:** Okay. So, **Ahm04,** did you not like finger breathing because it involved actually doing something physical, whereas the FOFBOC and the +2 and other mindfulness practices didn’t and you’re quite still?
**Ahm04:** It was tiring.

**Waj03:** It’s tiring and then you have to swap hands.

**Researcher:** Right. Ham01, what were you going to say?

**Ham01:** I was going to say that I actually agree with Ahm04 because I was just there like that (demonstrates finger breathing) and I was just like, “let me put my hand down now”. I was staying there for ages and ages and ages without putting it (reference to their hand) down.

**Researcher:** Okay. Well we can remember that because one of the questions later on is about whether there is anything that you would like to change about Paws .b, so remember that we talked about finger breathing. So, is there anything else that you liked about Paws .b? Yes Waj03?

**Waj03:** What I liked about Paws .b is, for example, that we feel so frustrated and then after that (reference to mindfulness practices) we feel calm. It teaches us about or brain like the prefrontal cortex and stuff.

**Researcher:** Right, so Paws .b isn’t just about mindfulness practices – it teaches you something as well about the brain?

**Waj03:** Yeah.

**Researcher:** How did everyone else feel about being taught about the brain?

**Adn20:** I felt quite happy because Science is my most favourite thing and I like to find out about the human body and the brain and all that kind of stuff.

**Researcher:** Oh good. Ham01?
**Ham01:** I liked learning about the brain because things like the hippocampus. I liked knowing about that.

**Researcher:** Right. Ahm04, what were you going to say?

**Ahm04:** I liked learning about the brain because you don’t really get to learn about the brain until you’re in Year-6 or high school.

**Researcher:** That’s a really good point. So apart from the mindfulness practices and the funny videos and learning about the brain, was there anything else that you liked about Paws .b? Adn20?

**Adn20:** I liked whenever it (reference to Paws .b) makes you feel calm and like you’re in a world where no one can hurt you.

**Researcher:** Right. Ahm04?

**Ahm04:** I also liked the chest and tummy breathing because you got to feel the pace of your heart in your chest.

**Researcher:** Okay. Anything else. Adn20?

**Adn20:** I liked the chest and tummy breathing because as I’m doing it I’m doing two things at one go and then I know how I feel whenever I’m breathing at different places in my body.

**Researcher:** Right. Is there anything else that any of you liked about Paws .b? Waj03?

**Waj03:** It makes you feel really relaxed, but the finger breathing didn’t help me that much.

**Ham01:** That’s why I liked the FOFBOC – all you had to do was sit there.

**Ahm04:** With the chest and tummy breathing, you don’t have to really do something with your hands you just rest them on your tummy and chest.
**Waj03:** Yeah. And with +2, you have a number and you just sit there adding. You don’t have to do anything else.

**Ham01:** I don’t like the chest and tummy breathing that much because you still have to hold your hands up. And you have to sit up straight like Mrs. Beale said.

**Waj03:** Yeah.

**Researcher:** Okay, so those were all the things that you liked about Paws .b and you all ticked, “I liked Paws .b”. However, is there anything that you didn’t like about Paws .b, except finger breathing because we’ve already spoken about that? Ahm04?

**Ahm04:** I didn’t like the way that we had to sit in our chairs for such a long time and keep our eyes closed for such a long time.

**Researcher:** Oh right. How did everyone else feel about sitting in your chairs to do the mindfulness practices? Waj03?

**Waj03:** I felt the same as Ahm04. It was really boring and also I can’t keep my eyes closed for a long time so I had to keep opening them and closing them.

**Researcher:** Right. Adn20, how did you feel?

**Adn20:** I’d just like to lie down in bed. I just wanted to do it in a bed and not on a chair.

**Researcher:** Right. Ham01, how did you feel about sitting in a chair?

**Ham01:** It felt quite tiring because usually when we do stuff, we get to stand up and stuff, and me and Ahm04 hand the books out, so we get to get out of our chairs and we don’t sit there for a long time.

**Ahm04:** It’s like exercise.
**Ham01**: When we’re doing things like finger breathing or FOFBOC or something, we have to keep our eyes shut and I’m just like, “I want to open them…”.

**Waj03**: That’s how I feel. That’s how I feel sometimes.

**Researcher**: So there are two things to talk about. There’s the fact that you don’t like sitting still for too long and there’s the bit about closing your eyes for a long time as well. So if we focus first on sitting still for too long, how could that be improved? Ahm04?

**Ahm04**: Stand up a bit longer.

**Researcher**: Okay. Adn20?

**Adn20**: Maybe we could put something else into it (reference to the Paws .b programme) that would be interesting, like swapping part of sitting so that you can sit on your legs or…

**Researcher**: Okay. So you could change your sitting position rather than having to sit in the same position?

**Adn20**: Yeah.

**Researcher**: Okay. Ham01, how would you improve the part about sitting still for too long?

**Ham01**: Like, you can stand up when you want, or when where’re done with the mindfulness practice, we can swap around and then do FOFBOC, and then we can move around again, and then we can sit on different seats to get up once in a while.

**Researcher**: Right. So get to move around the room by changing where you sit. Okay. Waj03, how would you like to improve the part about sitting still for too long?

**Waj03**: I don’t think that we need to change all of it. What I would change is, like, you do the FOFBOC, and you stay still, but you keep your eyes open. I don’t like it for too long.
**Researcher:** Yeah, because that’s the next thing to talk about is closing your eyes for a long time. So does anyone else have anything to suggest about how we could improve the sitting before we move on to talk about closing our eyes. Ahm04?

**Ahm04:** Sitting and trying to feel relaxed is really hard because there are lots of classrooms around us and there’s lots of noise and we can’t concentrate.

**Researcher:** Okay, so you mentioned finding it difficult to keep your eyes closed for a long time. Does anyone have an idea about how this could be improved? Adn20?

**Adn20:** Well it’s all like you’re in a blank place and you can’t even see. I just want to look at a nice image.

**Researcher:** Right, so rather than closing your eyes, you just wanted to look at a nice image, say either or the board or in front of you?

**Ham01:** Yeah.

**Adn20:** Yeah. Something calm and peaceful.

**Researcher:** Okay. Ham01, how would you improve the bit about having to close your eyes?

**Ham01:** When we’re doing mindfulness, when we’re doing anything like the FOFBOC or something, you can open your eyes if you want.

**Researcher:** So you’d like to have the choice to open your eyes if you wanted to?

**Ham01:** Yeah.

**Researcher:** Okay. Waj03, how would you improve the bit about having to close your eyes?

**Waj03:** I just don’t like it because when I close my eyes it’s just like completely blank and then I think that I’m blind and that I can’t see anything. So then if you leave your eyes open but stay still and don’t talk then you won’t get distracted or start laughing. And then the noise
from outside, like the heel of someone coming, it distracts us so much, so that’s why I’d rather have our eyes open.

**Researcher:** Oh, so do you mean that when you’re eyes are closed and you hear someone walking, it makes you want to open your eyes?

**Waj03:** Yeah.

**Researcher:** Okay. Ahm04, what were you going to say?

**Ahm04:** I don’t like closing my eyes unless I’m tired because I don’t want to close my eyes unless I’m tired because if you close your eyes, you keep on wanting to open them and because you’re not so tired, you’re not so tempted to close your eyes.

**Researcher:** Okay, so are you all saying that you’d like to have the options to keep your eyes open if you wanted and maybe look at a nice calm picture or something like that?

**All:** Yes.

**Researcher:** Okay. So before we move on, is there anything else that you didn’t like about Paws .b? Yes Waj03?

**Waj03:** The thing that I didn’t like about Paws .b is that we didn’t get to actually make anything. Like, first of all, we wrote on a post-it note how we felt, but then at the end we wrote again and that’s how we felt after mindfulness, so I’d feel like doing something extra.

**Researcher:** So does that mean that you’d like to do more writing?

**Waj03:** Yeah.

**Researcher:** Okay. So we could improve Paws .b by including some more writing activities like you do in class?

**Waj03:** Yes.
**Researcher:** Oh right. So we’ve kind of moved on to the next question which is about how Paws .b could be improved. So, now, I would like you to imagine that I’m the head teacher of a new primary school. So, “I’m interested in introducing Paws .b to my pupils, because I’ve heard a lot about it. What would you like to tell me about Paws .b? Yes Waj03?”

**Waj03:** I would say to you that Paws .b is actually a good activity to do. Also, it is a bit boring by putting your feet straight on the floor and closing your eyes. I want it to be more exciting then we can watch funny videos but also write about the videos.

**Researcher:** “Would anybody else like to tell me something about Paws .b? Adn20?”

**Adn20:** I would like to say that it is quite fun and interesting, but sometimes it’s a bit too much, like when we have to multi-task and that kind of stuff.

**Researcher:** “Okay. Ahm04, what would you like to tell me about Paws .b?”

**Ahm04:** That you wouldn’t want anyone to do the finger breathing.

**Researcher:** “Okay. Ham01, what would you like to tell me about Paws .b?”

**Ham01:** You can do some mindfulness and it might be a little bit distracting. But, you should do it to calm yourself down and don’t try the finger breathing.

**Researcher:** Ahm04?

**Ahm04:** It’s (reference to Paws .b) so boring.

**Ham01:** Yeah, it’s so boring.

**Researcher:** Okay, is all of it boring or just some of it?

**All:** No. Different bits.
Researcher: Okay. So if we made the improvements that we spoke about, do you think that Paws .b would be better.

All: Yeah.

Researcher: Okay everyone. So that is 30-minutes so I’ll stop the recording now.
Did you like paws .b?

Please put a tick above one face.

I didn’t like Paws .b

Paws .b was okay

I liked Paws .b
Did you like paws .b?

Please put a tick above one face.

I liked Paws .b

Paws .b was okay

I didn’t like Paws .b
Did you like paws.b?

Please put a tick above one face.

I liked paws.b

Paws.b was okay

I didn’t like paws.b
Did you like Paws .b?

Please put a tick above one face.

I didn’t like Paws .b

Paws .b was okay

I liked Paws .b
Appendix 26 – FG transcript: WCG (Time-2, boys)

Researcher: Okay. I’ve started recording now and I’ve started the stopwatch to make sure that we don’t go over half-an-hour. Now you’ve all said that you’re happy for me to record this conversation. Is that correct?

All: Yes.

Researcher: And you’re happy that when I write up this conversation, I will refer to you using an anonymous code?

All: Yes.

Researcher: Brilliant. Okay, so first of all, I want you to imagine that you’re talking to a friend at a different primary school. I want you to think about what you would tell them about Paws .b. So have a little think to yourself and as soon as you know what you would tell this imaginary friend, put your hand up and I’ll come to you one-by-one. Okay, Ghu31, we’ll go to you first.

Ghu31: I will tell them, “Do mindfulness because if you have any troubles or something serious, do it – you will be cool”.

Researcher: Wow. Jem29, what would you say to your friend about Paws .b?

Jem29: Imagine that one of my friends is really angry, I’ll tell them (reference to an imaginary friend at a different primary school) about our school and mindfulness and what we do and, “it also tests your brain”.

Researcher: Right. Brilliant. Sha23, what would you tell your friend about Paws .b?

Sha23: I would tell my friend to introduce mindfulness to (their) school because it is really relaxing; it (reference to Paws .b) makes you think over yourself; and nothing can get inside or annoy you.
**Researcher:** Right. So what do you mean about ‘nothing can get inside or annoy you’? Do you mean that you get less distracted?

**Sha23:** (Nods).

**Researcher:** Oh right.

**Researcher:** And you think that your friend should get it introduced into their school?

**Sha23:** Yeah.

**Researcher:** Right. Is there anything else that any of you would say to your friends about Paws .b?

**Per18:** Mindfulness can calm you down if you are proper angry at something.

**Researcher:** Right. Jem29?

**Jem29:** It’s really interesting about the brain and they can do mindfulness.

**Researcher:** Right. Ghu31?

**Ghu31:** If you do mindfulness, also, (your) brain goes interested and if there is anything, they cannot be angry.

**Researcher:** Brilliant. Anything else? Jem29?

**Jem29:** There’s no right or wrong in mindfulness so there’s no need to be showing off that they’re right or being really sad because they’re wrong. There’s no right or wrong.

**Researcher:** That’s right. So before we move on to the next question, is there anything else that anyone would tell their friends about Paws .b? Yes Sha23?
Sha23: They should try it (reference to Paws .b). If they like it, they should do it, and then we’ll have people doing it in the whole world.

Researcher: Right. So you think the whole world should try mindfulness?

Sha23: Yeah.

Per18: Yeah. Share the idea.

Sha23: Because nearly every person in the world has been angry once or more than once, so they should introduce mindfulness everywhere so if they get angry they can just calm down with mindfulness.

Researcher: So you thought that mindfulness was that good that you think it should be everywhere?

Sha23: Yeah.

Per18: Yeah.

Researcher: Right. Do you all agree with what each other have said?

All: Yeah.

Researcher: Right. So if we move on to the next question now. I’m going to give each of you a face chart. Now, if you look to the left there’s a sad looking face with a red box above it and underneath the face it says, “I didn’t like Paws .b”. If you look in the middle there’s a neutral face with an orange box above it and underneath the face it says, “Paws .b was okay”. Then, on the right there’s a happy face with a green box above it and underneath it says, “I liked Paws .b”. Without looking at each other’s answers, please tick the box that describes how you felt about Paws .b.

*** 15-SECOND PAUSE FOR PUPILS TO COMPLETE THE ACTIVITY ***
**Researcher:** Okay. So we’ll go around one-by-one. Per18? You ticked that you liked Paws .b. Ghu31? You ticked that you liked Paws .b. Jem29? You ticked the middle box – you thought that Paws .b was okay. Sha23? You ticked that you liked Paws .b. Okay, so three of you liked Paws .b and one of you thought that Paws .b was okay. Right, so if I start off with those of you who liked Paws .b, I’ll go round one-by-one and ask what you liked about Paws .b. So, Per18, what did you like about Paws .b?

**Per18:** Because it’s actually fun; it (reference to Paws .b) calms you down when you’re really angry; and, it (reference to Paws .b) helps you a lot with your learning because you get ideas about brains and you do the subject of brains.

**Researcher:** Fantastic. Ghu31, why did you like Paws .b?

**Ghu31:** Because when we do mindfulness, our mind concentrates and if we do our things (reference to mindfulness practices), we will never get mad or angry.

**Researcher:** Right. And then Sha23, why did you like Paws .b?

**Sha23:** I liked it because it makes you think over the past; it doesn’t make you feel emotional: sad or happy, it just calms you down; and, you don’t feel like doing anything wrong or right.

**Researcher:** Okay. What do you mean Sha23 by “think over the past”?

**Sha23:** If you’ve had some bad moments in your past, you can think over them and see if this happens again (reference to bad moments repeating themselves), you can see what is the right thing to do.

**Researcher:** Brilliant. Thank you. So for you three who said that you liked Paws .b, is there anything else that you want to add about what you liked about Paws .b? Yes Per18.

**Per18:** Because everybody has to do it and share it and share your feelings and things like that.
Sha23: I like it because you can share your feelings with other people who you’ve never seen before or never met before.

Researcher: So you liked that you could share your feelings with other people in your class who you’d never spoken to before?

Sha23: Yes.

Researcher: Brilliant. Okay. So for you three that liked Paws .b, was there anything that you didn’t like about Paws .b? Per18?

Per18: To be honest, I didn’t like doing the brain things.

Researcher: You didn’t like learning about the brain?

Per18: Yeah. I just didn’t like it.

Researcher: Okay. Sha23?

Sha23: I didn’t like it when we only did the breathing for 1-minute.

Researcher: So do you think that the mindfulness practices need to be longer?

Sha23: Yes, like two or three minutes.

Researcher: Oh right. Ghu31, was there anything that you didn’t like.

Ghu31: (Shakes head).

Researcher: Alright. So, Jem29, would you like to explain to me why you thought that Paws .b was okay?

Jem29: Because some of them (reference to Paws .b mindfulness practices), like the FOFBOC, were a waste of time. You won’t actually need that.
Researcher: Okay. So were there some aspects of Paws .b that you did like?

Jem29: Yeah, like when you do about fight/flight/freeze and the tummy and chest breathing.

Researcher: Alright. So you thought that Paws .b was okay because you preferred some of the mindfulness practices to others?

Jem29: Yeah.

Researcher: Okay. So which bits about Paws .b did you like?

Jem29: It was funny when we watched all those videos and when we did fight/flight/freeze.

Researcher: Okay. Was there anything else that you liked?

Jem29: Because of the tummy and chest breathing you get more focused into your tummy and chest breathing because right now, I wouldn’t even notice that my tummy and chest were moving, and then when you do it (reference to tummy and chest breathing) it’s like you concentrate into it.

Researcher: Okay. So, Jem29, what didn’t you like about Paws .b?

Jem29: The FOFOB and the finger breathing, and +2. And the brain, because only someone who wanted to be a scientist would want to learn about the brain and I don’t want to be a scientist.

Researcher: Okay. Sha23, you’ve wanted to say something for a while?

Sha23: You know when we do the (Paws .b mindfulness) practices, whatever we hear or whatever we feel, we just think of that our and mind wanders off onto a different topic.

Researcher: Okay, so was that a good thing or a bad thing?
Sha23: A bad thing because we weren’t concentrating.

Researcher: But you started noticing when your mind was wandering…

Sha23: Yes, because I was thinking of something else.

Researcher: And is that a good thing or a bad thing?

Sha23: A good thing.

Researcher: Yes Jem29?

Jem29: I can’t even close my eyes so when Mrs. Beale tells us to close our eyes, I’ll always be opening them.

Per18: Yeah.

Jem29: Because we’re sitting on a chair and closing our eyes, and I’d rather do that in bed.

Researcher: Yes Per18?

Per18: Like we were told to close our eyes and it’s really boring to close your eyes and all you do is just open them and your mind wanders off.

Researcher: So would you have preferred to have had the choice to keep your eyes open if you wanted to?

Per18: Yeah.

Jem29: Yeah.

Per18: But just looking at the floor.
Researcher: Sha23?

Sha23: I agree with Jem29 and Per18.

Researcher: Okay. So moving on now. What I want you to do is imagine that I’m the head teacher of a different primary school. “So, good morning. I am the head teacher of Leafy Lane Primary School in Didswade and we’re thinking about introducing mindfulness into our school for my Year-4 pupils. So what I would really like to know from you four is what you thought about Paws .b. Yes Sha23?”

Sha23: You should introduce it because it’s always making you think about your feelings; it (reference to Paws .b) makes you concentrate on something that you hear; you wonder off; and, it gives you time to think about something or just relax and stay calm.

Researcher: “Thank you. Jem29, what would you like to tell me about Paws .b?”

Jem29: It (reference to Paws .b) makes you always think twice so imagine that all your friends said to steal your dad’s coffee cup, and when your dad said not to and that’s a bad thing, so you think twice about, “What should I do?”

Researcher: Right. So mindfulness helps you think over things that you might otherwise do?

Jem29: Yes.

Researcher: Right. Yes Ghu31?

Ghu31: If someone has hurt their feelings then if we do mindfulness our mind can relax and we don’t think about those things.

Researcher: Right, brilliant. Yes Per18?

Per18: It’s (reference to Paws .b) helpful because you share feelings with other people. You see how you feel and it’s good to share, and then you don’t worry about anything.
Researcher: Right. Thank you for that Per18. Is there anything else that anyone would like to tell me about Paws .b? Yes Sha23?

Sha23: Whenever you do the (mindfulness) practices or watch a video, you always make sure that you express your feelings.

Researcher: Brilliant. Right, Per18?

Per18: I agree with Sha23 because if you feel feelings in your chest, you will still be worried, even if it’s not real, then if you let it go, I’ll tell you about it and you stop being worried about it and your feelings come off your chest.

Researcher: So are you and Sha23 saying that some of the mindfulness practices may bring up certain feelings, but that the practices help you to manage those feelings and that it is a good idea to let my pupils talk about their feelings afterwards?

Sha23: Yes.

Per18: (Nods).

Researcher: Okay. Jem29, what would you like to tell me?

Jem29: I agree with Sha23 and Per18 because if you were really feeling worried about something, say if you were getting bullied, and then at the end of each (Paws .b) lesson you can say if you’re feeling worried about something at school.

Researcher: Researcher. Right, thank you. Ghu31?

Ghu31: I agree with Jem29 because if we have something like bullying, bad things happen to you, if you do mindfulness, you cannot remember those times.

Researcher: Wow. Thank you all for that. The next question now is about whether you think Paws .b could be improved and if so, how could it be improved?
Sha23: They need to add more (Paws .b mindfulness) practices. You get a longer time to do the practices.

Researcher: So more practices and longer doing the practices?

Sha23: Yes. And, mindfulness needs to be in the morning or the afternoon – it should be for half a day. It should be longer.

Researcher: Okay, what does everyone else think about Sha23’s suggestion?

Jem29: I disagree with Sha29 – it should be shorter time but more weeks. You could do it twice a week so it can be shorter.

Researcher: So you think that the lessons should be shorter, say half-an-hour, but more frequent.

Jem29: You can do it twice a week.

Sha23: That’s what I meant.

Researcher: Oh, so that’s what you meant Sha23?

Sha23: Yeah.

Researcher: But Sha23, were you saying that in that half-an-hour lesson, you’d want to spend more time doing practices?

Sha23: Yeah.

Researcher: Yes Per18?

Per18: I agree with Jem29 and Sha23. We need more (Paws .b mindfulness) practices and what’s the point in doing 5-minute practices when you need to do more than 5-minutes really, like half-an-hour.
**Researcher:** So you’d rather spend longer on a practice, like half-an-hour?

**Sha23:** Yeah.

**Per18:** Yeah.

**Ghu31:** I agree with Per18 because when we do more practice, we can learn about more mindfulness and everybody can be cooled down.

**Researcher:** So is there anything else that could be improved about Paws .b?

**Sha23:** I don’t think so. I think it is fine as it is.

**Researcher:** But that you’d like to do two half-an-hour lessons instead of one one-hour lesson and you’d like to spend more time doing the mindfulness practices?

**Sha23:** Yes. Like two or three times a week but short lessons for like half-an-hour.

**Researcher:** And Per18, I can see you nodding. Do you agree with Sha23?

**Per18:** Yeah.

**Researcher:** Okay. So is there anything else about Paws .b that could be improved?

**Per18:** Nah.

**Sha23:** Nope.

**Researcher:** Ghu31?

**Ghu31:** No.

**Jem29:** They can add in more (Paws .b mindfulness) practices.
Researcher: Okay Jem29, what do you think would be good practices?

Jem29: Something we can act out, so we can pretend that we’re being bullied and we need to act out and pretend that we’re really sad and stuff, and then think about what we would do.

Researcher: So you think a bit of role play could be helpful to practice the different situations in which mindfulness could be helpful?

Jem29: Yeah.


Sha23: (Nods).

Researcher: Okay. Per18?

Per18: I agree with Jem29. You need more practices for your health.

Researcher: So you think that doing more practices and different types of practices would be helpful?

Per18: Yeah.

Researcher: Okay. The last question is, now that we’ve talked about the improvements that you’d like to make, is there anything else that you would like to feed back about Paws .b before we stop recording?

Jen29: (Shakes head).

Sha23: No.

Researcher: Ghu31? Per18?
Ghu31: (Shakes head).

Per18: (Shakes head).

Sha23: There’s only one thing. The thing that I like about mindfulness is it makes you relax; you’re always calm when you do mindfulness; the breathing, it (reference to Paws .b) helps you concentrate on your breath and the things that you can hear, smell or see, and even feel.

Researcher: Okay. Thank you. Jem29, what would you like to say?

Jem29: Maybe the teachers should record it and make it better. So Mrs. Beale would make it the same every time so you do a practice then you watch a video and that’s it. So she (reference to Mrs. Beale) should film it (reference to Mrs. Beale delivering a mindfulness practice/ lesson), watch it and think about how to improve it.

Per18: I agree with Jem29 because what’s the point of doing the same practice every time if you just do different ones. And what’s the point in just having 6-weeks (of Paws .b)?

Researcher: Well what does everyone else think about Paws .b going on for longer?

Sha23: Yeah.

Researcher: So you think it would be a good idea?

Sha23: Yeah.

Jem29: I disagree. We can have shorter lessons, like three lessons a week, so by the time it’s six week, it would be 18 lessons or something.

Researcher: So you (reference to Jem29) think that we should do three shorter lessons per week but still over 6-weeks?

Jem29: Yeah.
Ghu31: Yeah.

Researcher: But Per18, were you saying that even after 6-weeks, you want the Paws .b lessons to keep going?

Per18: Yeah.

Researcher: Okay. Sha23?

Sha23: I’ve got a way that we should introduce mindfulness to other schools. If we video one class doing mindfulness and send it to a different school, they might like it and they might start doing it in their school.

Researcher: So you think that we could be pioneers and record mindfulness lessons and show them to other schools to see if they would like to do it?

Sha23: Yeah.

Per18: Yeah.

Researcher: That sounds like a good idea. So is there anything else that any of you would like to say about Paws .b before we finish recording?

Per18: I never want it (reference to Paws .b) to end. Just for half-an-hour.

Researcher: That’s nice Per18.

Sha23: I think that mindfulness should be done everywhere in the whole world, and then schools which are frustrating and making you angry and you get bullied there a lot, you can just calm down and try make other people calm down as well. They should do it in frustrating countries like Africa because some people are poor there and they want to learn and they feel frustrated because they can’t have a job or go to school.
Researcher: So, that is 27-minutes, so unless there’s anything else that anyone would like to say?

*** 10-second pause ***

Researcher: Okay. Well I’ll finish recording now.
Did you like paws .b?

Please put a tick above one face.

I didn't like Paws .b

Paws .b was okay

I liked Paws .b
Did you like paws .b?
Please put a tick above one face.

I didn’t like Paws .b
Paws .b was okay
I liked Paws .b
Did you like paws .b?

Please put a tick above one face.

I liked paws .b

Paws .b was okay

I didn’t like paws .b
Did you like paws.b?

Please put a tick above one face.

I liked paws.b

paws.b was okay

I didn’t like paws.b
Appendix 28 – FG transcript: WCG (Time-2, girls)

Researcher: Right. I’ve started the stopwatch now to make sure that we don’t go over half-an-hour. So you’ve all said that you’re happy for me to record this conversation?

All: Yes.

Researcher: And you’re happy that when I write up the conversation it will be anonymous?

All: Yes.

Researcher: Brilliant. So, first of all, what I would like you to do is imagine that you have a friend who goes to a different primary school, and imagine that they have never heard about Paws .b. What would you tell them about Paws .b?

*** 10-second pause ***

Researcher: Okay. So we can go round one-by-one. Kha22, what would you tell your friend about Paws .b?

Kha22: I would tell them that it’s really fun and, “You should try it (reference to Paws .b) because it helps you concentrate and your mind won’t wonder off that much”.

Researcher: Right. So it helps you concentrate and your mind won’t wonder as much?

Kha22: Yeah.

Researcher: Very interesting. Yes Ina25, what would you tell your friend about Paws .b?

Ina25: I’d say, “Come to Harry Close (Primary Academy) and they’ll teach you mindfulness and it’s really good – you should try it. And, if you get angry, the lessons will calm you down”.

Researcher: Right. Thank you. Tan20?
Tan20: I think that they should come (to) Harry Close (Primary Academy) because mindfulness is all about your brain and what it tells you to do.

Researcher: Right. And Moh22, what would you tell your friend about Paws .b?

Moh22: Like, if you’re afraid of something, mindfulness can help you overcome your fear, like, try your best and do it.

Researcher: Brilliant. Is there anything else that any of you would like to tell your friends about Paws .b?

Kah22: I can’t think of anything.

Researcher: Okay Kha22. Ina25?

Ina25: Mindfulness is really fun and sometimes you can… when you need to concentrate on something, and if you hear a sound, you go about that and you forget what you’re doing, mindfulness can help you and if you try mindfulness, that (reference to distractibility and forgetting what you’re doing) wouldn’t ever happen again.

Researcher: So mindfulness stops your mind from wandering as much and it’s easier to concentrate?

All: (Nods).

Researcher: Right. I can see that you’re all nodding. Okay. Very interesting. So, for the next question I’m going to give you all a face chart. As you can see, on the left there is a sad looking face with a red box above it, and underneath it says, “I didn’t like Paws .b”. In the middle there is a neutral face – a face that doesn’t show anything with an orange box above it, and underneath it says, “Paws .b was okay”. On the right there is a happy face with a green box above it, and underneath it says, “I liked Paws .b”. Without looking at each other’s answers, please tick the box that describes how you felt about Paws .b.
Researcher: So Kha22, what did you tick?

Kha22: Green (reference to liking Paws .b).

Researcher: So Kah22, you liked Paws .b. Ina25, what did you tick?

Ina25: Green (reference to liking Paws .b).

Researcher: So Ina25, you liked Paws .b. Tan20?

Tan20: Green (reference to liking Paws .b).

Researcher: Okay, so you (reference to Tan20) liked it as well. And then Kha22?

Moh22: I haven’t chosen yet.

Researcher: Okay, that’s fine. I’ll come to you in a minute.

Moh22: Can I tick a box at the end (reference to the end of the focus group)?

Researcher: You can, but I would like you to tick the box now if you know how you felt about Paws .b. Okay?

Moh22: Yes.

Researcher: Okay, so we’ll go around one-by-one. So, Kha22, why did you like Paws .b?

Kha22: It was fun and I liked it.

Researcher: Good.

Kha22: It was nice and you didn’t have to do work.
Researcher: Okay. So did you like that you didn’t have to do work, or did Paws .b seem different to your normal lessons?

Kha22: It felt different because when you close your eyes in lessons it feels weird.

Researcher: Was that a bad different or a good different?

Kha22: Good.

Researcher: Okay. Ina25, why did you like Paws .b?

Ina25: Because I really enjoyed it and it was kind of like work and I like doing work. And sometimes I was really tired and mindfulness gave me energy.

Researcher: Right. Very interesting. Tan20, why did you like Paws .b?

Tan20: Because it meant peace – a sign of peace.

Researcher: So do you all (reference to Tan20, Kha22 and Ina25) agree with each other’s answers?

Tan20: Yeah.

Ina25: Yeah.

Kha22: Yeah.

Researcher: Okay. Moh22, have you managed to do a tick yet?

Tan20: Moh22, come on man!

Researcher: It’s fine.
Ina25: Ohh, she ticked the red.

Researcher: It’s fine. Everyone is entitled to share how they felt about Paws .b. So, Moh22, because you ticked that you didn’t like Paws .b, I’ll just finish speaking to Tan20, Ina25 and Kha22 because they all said that they liked Paws .b, then I’ll come to you. Okay?

Moh22: Okay.

Researcher: So, Ina25, Kha22 and Tan20, was there anything else that you liked about Paws .b?

Tan20: It was peaceful and it wasn’t distracting.

Researcher: Okay. What do you girls (reference to Ina25 and Kha22) think?

Ina25: When they (reference to other pupils) distract, I can’t hear them.

Researcher: Right. Go on then Kha22?

Kha22: My mind doesn’t wonder off that much anymore.

Researcher: Right. Brilliant. And then Ina25, what else were you thinking?

Ina25: I ticked the green box (reference to liking Paws .b) because sometimes, when I’m doing my work and people distract me, I get really angry. But then, when I had mindfulness lessons, it made me calm down myself and now I’m fine.

Researcher: So it helps you calm down more when you get distracted?

Ina25: Yes. And at home, my brother makes me really angry, he’s really annoying. But then, I calm down myself and tell him to stop. Sometimes he’s nice and sometimes he’s really annoying.
**Researcher:** Well that just sounds like brothers to me. So, before I move on to Moh22, even though you all (reference to Kha22, Ina25 and Tan20) ticked that you liked Paws .b, was there anything that you didn’t like about Paws .b?

**Tan20:** No.

**Kha22:** No.

**Ina25:** I liked everything. I liked everything.

**Researcher:** So you liked it all?

**Tan20:** Yeh.

**Ina25:** Yeh.

**Kha22:** Yeh.

**Researcher:** Okay then. So, Moh22, why didn’t you like Paws .b?

**Moh22:** Because Mrs. Beale said my body sensation and you gave back, but you couldn’t because people were like opening their eyes and I was getting distracted so I couldn’t feel anything.

**Researcher:** So you found it hard to focus on your bodily sensations because you found yourself being distracted by other pupils?

**Moh22:** Yeah.

**Researcher:** Are there any other reasons why you didn’t like Paws .b?

**Moh22:** I didn’t like it because it (reference to Paws .b) doesn’t make any sense. Like, it doesn’t feel like anything and it just makes us relaxed, that’s it.
**Researcher:** So mindfulness didn’t make any sense to you?

**Moh22:** Yeah, because if you’re, like, doing mindfulness, you’ll have like a thing that distracts you from doing mindfulness, like Mrs. Beale talking, and you get distracted awake.

**Researcher:** So you found it quite difficult to focus on the sensation of breathing when Mrs. Beale was talking?

**Moh22:** Yeah.

**Researcher:** Okay. But was there anything that you did like about Paws .b?

**Moh22:** (Shakes head).

**Researcher:** Okay.

**Ina25:** I need to say something.

**Researcher:** Okay, go on.

**Ina25:** I like mindfulness because sometimes, in the holidays, when it’s time for school, I get scared at night time, but Mrs. Beale and mindfulness said that thoughts, sometimes, are not real, and when I watch them (reference to watching thoughts) I don’t get as scared now.

**Researcher:** Okay. So mindfulness has helped you with worrying at bedtime and it has helped you realise that your thoughts aren’t facts and that you can choose not to engage with them?

**Ina25:** Yes.

**Researcher:** Very interesting. Yes Kha22?

**Kha22:** When I go swimming, I feel a bit funny that day, but when I go there, it just isn’t on my mind.
**Researcher:** Yeah? So you felt a bit weird about swimming before Paws .b, but now you feel alright about it? You’re not as worried about swimming anymore?

**Kha22:** Yeah.

**Researcher:** Oh right. Moh22?

**Moh22:** I have the same idea as Kha22 as well, like when I go swimming, mindfulness doesn’t even help you – it just stays the same.

**Researcher:** Right, so we have a difference of opinion here. So for you Kha22, mindfulness helped you and it helped you with your swimming, whereas for you Moh22, mindfulness didn’t help you and hasn’t helped you with your swimming, which is fine. Yes Ina25?

**Ina25:** Mindfulness helped me with swimming because first I was really scared and nervous, but then Mrs. Beale said fight, flight and freeze and when she taught us fight, flight and freeze, the next time we went swimming, I wasn’t nervous – I fought it all and I did it.

**Researcher:** So are you saying that it wasn’t just the mindfulness practices that helped you and that it was helpful to learn other things about your body like fight, flight and freeze?

**Ina25:** Yeh. I really liked it – I want to do it again.

**Kha22:** Yeah.

**Tan20:** Yeah.

**Ina25:** I want to do it all over again, like all over again.

**Tan20:** Yeh.

**Ina25:** From the start.
Researcher: Okay. So the three of you (reference to Tan20, Ina25 and Kha22) who liked Paws .b would like to do it all over again. Moh22, how would you feel about doing Paws .b again?

Moh22: Boring.

Researcher: So it’s something that you’ve tried and you wouldn’t like to do it again?

Moh22: Maybe when I’m older, maybe I might like it (reference to Paws .b), because you tend to get stressed out when you work all the time.

Researcher: So you think it might be helpful in the future when you’re more stressed out with work?

Moh22: Yeah.

Researcher: Well it’s interesting that you feel that Paws .b would be helpful for you in the future. Was Paws .b just not very helpful for you right now?

Moh22: (Shakes head).

Researcher: No, you’re shaking your head. Okay. Yes Ina25?

Ina25: Mindfulness can help adults as well because adults go to jobs and sometimes they get stressed and they could use mindfulness to, you know, get better.

Moh22: But they don’t teach any of them mindfulness.

Ina25: But what if you (reference to Mrs. Beale) teach us and we teach them, they could do it.

Moh22: But the adults are going to think it’s so stupid. Like, my sister is like 18 and she’s never been taught that (reference to mindfulness), and she’d think it was so stupid and, “Why would you waste your time doing mindfulness?”
**Researcher:** So you think that adults would think that mindfulness was stupid?

**Moh22:** Yeah, and they’d think, “That’s so stupid. It’s a waste of my time in my job”, and then they’d get fired.

**Researcher:** So you think that your sister would get fired from her job if she did mindfulness at work?

**Moh22:** Yeah, like you have a strict headmaster who tells you to do everything and you get so stressed out and then you’d think, “That’s so stupid – a waste of my time in my job”, and then they get fired.

**Researcher:** So are you saying that your sister has a lot of things to do in her job and that she wouldn’t have time to do mindfulness as part of her job?

**Moh22:** Yeah, like, when she’s older she can do it (reference to mindfulness) because she has more time and space.

**Researcher:** Okay, I get you. Go on then Tan20?

**Tan20:** What if you go to the chocolate part (reference to an element of the Paws .b mindfulness programme) and if I give it to my mum, she’ll just eat it.

**Ina25:** You know adults? Adults think that we’re (reference to the pupils) stupid and that mindfulness wouldn’t help them, we could be like, “Yeah, okay then. If you don’t want to do it, fine, that’s your choice. But then, when you need it (reference to mindfulness), you will beg us to teach you”. And with adults, if you want to control adults, we could say, “If you want this chocolate, you need to listen to us first”.

**Researcher:** So you think that mindfulness would be helpful for adults?

**Ina25:** Yeh.
**Researcher:** Okay. Moh22, you were going to say?

**Moh22:** Teenagers and adults can do anything they want and if they don’t want to do it (reference to mindfulness) and you’re forcing them to do it (reference to mindfulness), they’ll just walk away.

**Researcher:** You’re right. You couldn’t force adults to do mindfulness, so it would just depend whether they chose to do it. So we’ll have one more statement from Ina25 before we move on.

**Ina25:** If we teach our parents (reference to mindfulness), and our parents teach (reference to mindfulness) someone else, and that person teaches someone else, then you will go in a circle around the whole world and then no one would be angry or stressed.

**Researcher:** So, we’ve got about 10-minutes left. Now, what I would I would like you to imagine is that I’m the head teacher of a new primary school that is interested in introducing its pupils to Paws .b. So, “I’m thinking about introducing mindfulness into my school. So, what can you tell me about Paws .b? Yes Tan20?”

**Tan20:** Mindfulness is all about your brain and your hippocampus, your emergency button (reference to the amygdala). It’s peaceful, and whenever you get stressed off your other school, you can use it (reference to mindfulness) and then you have to concentrate on what you’re doing, but if you can’t concentrate, it’s okay because your brain will help bring it (reference to concentration) back to you.

**Researcher:** “Right, so it would help my pupils calm down and it would help them learn how to concentrate better. But if their attention wanders, did you say that Paws .b teaches them how to bring their attention back?”

**Tan20:** Yes.

**Researcher:** “Right. That’s very interesting. Ina25, what would you like to tell me about Paws .b?”
Ina25: Mindfulness is really fun and if something makes you feel really, really, really angry, mindfulness could help you get not angry and then when you calm down, you can live really happily.

Researcher: “So it would help my pupils be happier because they would be less angry?”

Ina25: Yes, and, if you’re doing something and something or someone gets you stressed, and you get really angry, you could use your mindfulness and breathing to make yourself calm down.

Researcher: “Okay. Moh22, what would you like to tell me about Paws .b?”

Moh22: I disagree with everyone (reference to Ina25 and Tan20) because in the middle of mindfulness if you need to go to the toilet really quickly, it’s just going to distract you.

Researcher: “Okay, so some of my pupils might get distracted during mindfulness practices?”

Moh22: Yeah.

Researcher: “Okay. So is there anything else that any of you would like to tell me about Paws .b? Yes Kha22?”

Kha22: There are a few different types of things (reference to mindfulness practices) that you can do. There’s FOFBOC; there’s chest (and tummy) breathing; there’s finger breathing…

Researcher: “Okay, so there are different mindfulness practices that my pupils can do?”

Kha22: Yes.

Researcher: “Okay. Yes Ina25?”
Ina25: And the people (reference to pupils) that don’t get it (reference to mindfulness), we could teach them and they could get it (reference to mindfulness), and then they could teach someone else.

Researcher: “Oh, so mindfulness is a skill, so one a pupil has learnt it they could teach other people?”

Ina25: Yeah. If you have something that you’re afraid of or if you’re angry, mindfulness can help get it out of you.

Researcher: “Okay, so mindfulness can help get scary feelings or anger out of you. Tan20?”

Tan20: Mindfulness, it can help you remember stuff like if your mum tells you to put £25 in her bag, and then you can remind her.

Researcher: “So mindfulness helps you remember things?”

Tan20: Yeah.

Ina25: Yeh.

Kha22: (Nods).

Ina25: Mindfulness can help you remember things, like, pretend I needed a pencil and it was just in front of me, and if it was like a test and I was like, “Ohh ohh”, then I would calm myself down and look around and I could see it (reference to the pencil).

Researcher: “Oh, so mindfulness helps you calm down and stops you from worrying so that you can remember things more clearly?”

Ina25: Yeah.

Tan20: Yeh.
**Researcher:** “Right. Moh22, before we move on?”

**Moh22:** Why would children understand anything about mindfulness? They don’t know every single part of the body so adults should do it because they know better and they’re grown up and they learn about different experiences, and why should the children do it because they don’t have more experience and education and all that.

**Researcher:** “So you think mindfulness is something that my pupils might not like?”

**Moh22:** Yeah.

**Tan20:** I disagree with Moh22 because I think mindfulness can be taught to young children, like my baby sister is two (years-old) and anything I do, she copies me, so I could teach her mindfulness.

**Researcher:** “Okay, so Tan20, you think that mindfulness is something that can be taught to even young children?”

**Tan20:** Yeh.

**Researcher:** “Okay, and one last comment from Ina25?”

**Ina25:** I disagree with Moh22 because adults and children can learn it (reference to mindfulness). If adult teach us, we can teach our mum and dad, and they could teach someone else and all around. And I agree with Tan20, you can even teach babies and people older than you.

**Researcher:** So, we’ve got about one minute left and I have just one question to ask. Is there anything that could be improved about Paws .b?

**Tan20:** You should do it (reference to Paws .b) from 09.00 till 12.00 so that all your stress you can get out of your brain.

**Researcher:** So Tan20, you think that Paws .b should be done for longer and in the morning?”
Tan20: Yeh.

Researcher: Okay. Ina25?

Ina25: I think that everything that needed to be included has already been done. I think that everything is good and that there’s nothing to improve.

Researcher: Okay. Kha22?

Kha22: I agree with both (reference to Tan20 and Ina25).

Researcher: Okay, that’s 30-minutes so for ethical reasons, I’m going to stop the recording now.
Did you like paws .b?

Please put a tick above one face.

I didn’t like Paws .b

Paws .b was okay

I liked Paws .b
Did you like Paws .b?

Please put a tick above one face.

I liked Paws .b

Paws .b was okay

I didn’t like Paws .b
Did you like paws b?

Please put a tick above one face.

I liked Paws b

Paws b was okay

I didn’t like Paws b
Did you like Paws.b?

Please put a tick above one face.

I liked Paws.b
Paws.b was okay
I didn't like Paws.b
Appendix 30 – FG codes with data extracts

Pupils enjoyed Paws .b

- **Ahm30**: I felt a bit sad because mindfulness had ended.

  **Researcher**: Ahm30, you said that you felt sad when Paws .b stopped. Does that mean that you really liked it then?

  **All**: Yeah.

- **Researcher**: Well that sounds nice. Is there anything else that you would like to tell me about Paws .b?

  **Rac20**: They (reference to the researcher’s imaginary pupils) will laugh lots of times.

  **Researcher**: Okay, so my pupils will laugh?

  **Rac20**: Yes. If they were like me, and I don’t laugh, then they are going to laugh because Mrs. Beale has got a lot of good videos.

  **Researcher**: Oh right. So my pupils are going to laugh and have a good time.

  **Ahm30**: Researcher, they will have a good time.

- **Waj03**: I would say to you that Paws .b is actually a good activity to do.

- **Researcher**: “Would anybody else like to tell me something about Paws .b? Adn20?”

  **Adn20**: I would like to say that it is quite fun and interesting, but sometimes it’s a bit too much, like when we have to multi-task and that kind of stuff.
- **Researcher:** So, Per18, what did you like about Paws .b?

  **Per18:** Because it’s actually fun.

- **Per18:** I never want it (reference to Paws .b) to end.

- **Kha22:** I would tell them that it’s really fun.

- **Kha22:** It was fun and I liked it.

- **Ina25:** Sometimes I was really tired and mindfulness gave me energy.

- **Ina25:** I really liked it – I want to do it again.

  **Kha22:** Yeah.

  **Tan20:** Yeah.

  **Ina25:** I want to do it all over again, like all over again.

  **Tan20:** Yeh.

  **Ina25:** From the start.

**Pupils found Paws .b to be relaxing**
- Ahm30: When I did the FOFBOC, I felt like I wanted to wake up because I really felt comfortable.

- Ahm30: Yeah and then when you open your eyes you feel more relaxed and it’s like your brain is sleeping.

- Researcher: Okay. So how did you feel after you did a mindfulness exercise? How did you feel afterwards?

  Far06: Calm.

- Adn20: I would say that it’s (reference to Paws .b) mindfulness that we do at our school and it’s something that keeps us calm and relaxed.

- Ahm04: It’s (reference to Paws .b) really relaxing.

- Han01: I would say that then you do mindfulness, you feel kind of relaxed and you forget about everything that’s happened. It’s like a year has happened and then you’ve just forgotten about it.

- Ham01: I liked Paws .b because it was very calming.

- Researcher: Right. Brilliant. Sha23, what would you tell your friend about Paws .b?

  Sha23: I would tell my friend to introduce mindfulness to (their) school because it is really relaxing.
Pupils found Paws .b to be helpful for self-regulation

- **Rac20**: [W]hen you panic, you can always do the finger breathing and you will be calmer and calmer.

- **Aur05**: It can be good because you do it (reference to chest and tummy breathing) and then you breathe and, like, it helps you to calm down.

- **Ahm30**: I’d do the chest breathing and say that when you panic and when you do it you’ll feel a lot more relaxed and calm.

- **Far06**: You can do the chest and tummy breathing technique and it will calm you down more, and if you feel angry, you can do breathing for one big breathe, for like 20-seconds, and you’ll calm down.

- **Aur05**: You can use the finger breathing and it calms you down. If you do it 10 times then you might feel calm.

- **Ahm30**: I liked the chest breathing because when I feel uncomfortable, you just do it and you feel comfortable and you stop panicking.

- **Aur05**: You know when my dad went work yeah, I was always panicking and I was in danger or something, but then when he came home I wasn’t panicking.

**Researcher**: Okay Aur05, so do you feel that mindfulness helped you panic less
about your dad was at work?

**Aur05:** Yeah.

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- **Researcher:** Okay. Aur05, what can you tell me about Paws .b?

**Aur05:** It’s good because if your pupils are mad, you can just tell them to do it.

**Researcher:** Oh right, so it should help my pupils calm down?

**Rac20:** They won’t panic.

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- **Waj03:** What I liked about Paws .b is, for example, that we feel so frustrated and then after that (reference to Paws .b mindfulness practices) we feel calm.

- **Per18:** Mindfulness can calm you down if you are proper angry at something.

- **Per18:** [I]t (reference to Paws .b) calms you down when you’re really angry.

- **Ghu31:** If someone has hurt their feelings then if we do mindfulness our mind can relax and we don’t think about those things.

- **Ina25:** Sometimes, when I’m doing my work and people distract me, I get really angry. But then, when I had mindfulness lessons, it made me calm down myself and now I’m fine.
- Ina25: Mindfulness is really fun and if something makes you feel really, really, really angry, mindfulness could help you get not angry and then when you calm down, you can live really happily.

- Ahm30: Researcher, if there’s any bullying in your class, if they calm down, they might stop bullying people.

    Researcher: Oh right, so you think that Paws .b might help my pupils stop bullying each other.

- Jem29: It (reference to Paws .b) makes you always think twice so imagine that all your friends said to steal your dad’s coffee cup, and when your dad said not to and that’s a bad thing, so you think twice about, “What should I do?”

    Researcher: Right. So mindfulness helps you think over things that you might otherwise do?

    Jem29: Yes.

**Pupils found Paws .b to be helpful for managing difficult situations**

- Aur05: You can do it. You know, my baby, it nearly swallowed something and we took it out. If you do it (reference to the Paws .b mindfulness practices), you’ve forgotten about it.

    Researcher: Oh right, so Paws .b helps you deal with difficult situations?

    Aur05: Yeah.
- **Ham01**: I would say what everyone else has said, but I would say that I had loads and loads of problems and then when we did mindfulness my situations went away and I felt kind of calm.

**Researcher**: So it actually helped you manage certain difficult situations?

**Ham01**: Yep.

- **Ghu31**: I will tell them, “Do mindfulness because if you have any troubles or something serious, do it – you will be cool”.

- **Ghu31**: [I]f we have something like bullying, bad things happen to you, if you do mindfulness, you cannot remember those times.

- **Moh22**: Like, if you’re afraid of something, mindfulness can help you overcome your fear, like, try your best and do it.

- **Kha22**: When I go swimming, I feel a bit funny that day, but when I go there, it just isn’t on my mind.

**Researcher**: Yeah? So you felt a bit weird about swimming before Paws .b, but now you feel alright about it? You’re not as worried about swimming anymore?

**Kha22**: Yeah.

- **Ina25**: Mindfulness helped me with swimming because first I was really scared and nervous, but then Mrs. Beale said fight, flight and freeze and when she taught us fight, flight and freeze, the next time we went swimming, I wasn’t nervous – I fought it all and I did it.
**Ina25:** I like mindfulness because sometimes, in the holidays, when it’s time for school, I get scared at night time, but Mrs. Beale and mindfulness said that thoughts, sometimes, are not real, and when I watch them (reference to watching thoughts) I don’t get as scared now.

**Researcher:** Okay. So mindfulness has helped you with worrying at bedtime and it has helped you realise that your thoughts aren’t facts and that you can choose not to engage with them?

**Ina25:** Yes.

**Pupils found Paws .b to be helpful for self-reflection**

- **Waj03:** First of all, when I felt frustrated or “I don’t feel like doing it”, it (reference to Paws .b) makes you feel calm and it makes you forget all the stuff that has happened in the past.

- **Sha23:** [I]t (reference to Paws .b) makes you think over yourself.

- **Researcher:** Right. And then Sha23, why did you like Paws .b?

**Sha23:** I liked it because it makes you think over the past.

**Researcher:** Okay. What do you mean Sha23 by “think over your past”?

**Sha23:** If you’ve had some bad moments in your past, you can think over them and see if this happens again (reference to bad moments repeating themselves), you can see what is the right thing to do.
Pupils found Paws .b to be helpful for reducing distractibility/ improving concentration

- Sha23: [N]othing can get inside or annoy you.

  Researcher: Right. So what do you mean about ‘nothing can get inside or annoy you’? Do you mean that you get less distracted?

  Sha23: (Nods).

  Researcher: Oh right.

- Researcher: Fantastic. Ghu31, why did you like Paws .b?

  Ghu31: Because when we do mindfulness, our mind concentrates.

- Sha23: [I]t (reference to Paws .b) makes you concentrate on something that you hear.

- Kah22: “You should try it (reference to Paws .b) because it helps you concentrate.”

- Ina25: [W]hen you need to concentrate on something, and if you hear a sound, you go about that and you forget what you’re doing, mindfulness can help you and if you try mindfulness, that (reference to distractibility and forgetting what you’re doing) wouldn’t ever happen again.

  Researcher: So mindfulness stops your mind from wandering as much and it’s easier to concentrate?
All: (Nods).

- **Tan20:** It was peaceful and it wasn’t distracting.

**Researcher:** Okay. What do you girls (reference to Ina25 and Kha22) think?

**Ina25:** When they (reference to other pupils) distract, I can’t hear them.

- **Tan20:** [Y]ou can use it (reference to Paws .b) and then you have to concentrate on what you’re doing, but if you can’t concentrate, it’s okay because your brain will help bring it (reference to concentration) back to you.

**Researcher:** “Right, so it would help my pupils calm down and it would help them learn how to concentrate better. But if their attention wanders, did you say that Paws .b teaches them how to bring their attention back?”

**Tan20:** Yes.

**Pupils found Paws .b to be helpful for monitoring and reducing mind wanderings**

- **Researcher:** But you started noticing when your mind was wandering…

**Sha23:** Yes, because I was thinking of something else.

**Researcher:** And is that a good thing or a bad thing?

**Sha23:** A good thing.
- **Kah22:** “[Y]our mind won’t wonder off that much.”

- **Researcher:** So mindfulness stops your mind from wandering as much and it’s easier to concentrate?

  **All:** (Nods).

- **Kha22:** My mind doesn’t wonder off that much anymore.

**Pupils found Paws .b to be helpful for noticing/ managing somatic sensations**

- **Aur05:** When I did the FOFBOC, when I was doing it, my feet went hot and I was active.

- **Aur05:** My whole body was hot.

- **Ahm04:** It’s kind of like sleeping but feeling the sensations in your body.

- **Jem29:** Because of the tummy and chest breathing you get more focused into your tummy and chest breathing because right now, I wouldn’t even notice that my tummy and chest were moving, and then when you do it (reference to tummy and chest breathing) it’s like you concentrate into it.

- **Sha23:** [I]t (reference to Paws .b) helps you concentrate on your breath and the things that you can hear, smell or see, and even feel.
- **Waj03:** Erm, my friend, I would tell her that mindfulness is very good for you. For example, at the start of mindfulness, you think, “oh my gosh, I have a headache” and stuff, and then after you’ve done mindfulness, you actually feel relaxed and calm.

  **Researcher:** So you felt so relaxed after mindfulness that it got rid of your headache?

  **Waj03:** Yeah.

- **Waj03:** I have bad, very very bad stomach pains, and after you’ve done all of the mindfulness, Paws .b, you feel like, “Oh my gosh – I feel like doing it all again”.

  **Researcher:** Right. So did Paws .b help with your pains in your stomach Waj03?

  **Waj03:** Yeah.

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**Pupils found Paws .b to be helpful for reducing forgetfulness**

- **Tan20:** Mindfulness, it can help you remember stuff like if your mum tells you to put £25 in her bag, and then you can remind her.

  **Researcher:** “So mindfulness helps you remember things?”

  **Tan20:** Yeah.

  **Ina25:** Yeh.

  **Kha22:** (Nods).

  **Ina25:** Mindfulness can help you remember things, like, pretend I needed a pencil
and it was just in front of me, and if it was like a test and I was like, “Ohh ohh”, then I would calm myself down and look around and I could see it (reference to the pencil).

**Researcher:** “Oh, so mindfulness helps you calm down and stops you from worrying so that you can remember things more clearly?”

**Ina25:** Yeah.

**Tan20:** Yeh.

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**Pupils enjoyed sharing their feelings with each other throughout Paws .b**

- **Researcher:** Brilliant. Thank you. So for you three who said that you liked Paws .b, is there anything else that you want to add about what you liked about Paws .b? Yes Per18.

**Per18:** Because everybody has to do it and share it and share your feelings and things like that.

**Sha23:** I like it because you can share your feelings with other people who you’ve never seen before or never met before.

**Researcher:** So you liked that you could share your feelings with other people in your class who you’d never spoken to before?

**Sha23:** Yes.

- **Per18:** It’s (reference to Paws .b) helpful because you share feelings with other people. You see how you feel and it’s good to share, and then you don’t worry about anything.
- **Sha23:** Whenever you do the (mindfulness) practices or watch a video, you always make sure that you express your feelings.

- **Per18:** I agree with Sha23 because if you feel feelings in your chest, you will still be worried, even if it’s not real, then if you let it go, I’ll tell you about it and you stop being worried about it and your feelings come off your chest.

**Researcher:** So are you and Sha23 saying that some of the mindfulness practices may bring up certain feelings, but that the practices help you to manage those feelings and that it is a good idea to let my pupils talk about their feelings afterwards?

**Sha23:** Yes.

**Per18:** (Nods).

**Researcher:** Okay. Jem29, what would you like to tell me?

**Jem29:** I agree with Sha23 and Per18 because if you were really feeling worried about something, say if you were getting bullied, and then at the end of each (Paws .b) lesson you can say if you’re feeling worried about something at school.

**Pupils embraced the Paws .b mindfulness practices**

- **Rac20:** [I]t’s very good because you can try everything.

- **Researcher:** So, Aur05, what did you like about Paws .b?

**Aur05:** The chest and tummy breathing…(5-second pause).
Researcher: Brilliant. Rac20, what did you like about Paws.b.

Rac20: I liked the torch…

Researcher: Do you mean the ‘searchlight of attention’?

Rac20: Yes, because I was good at it.

- Ahm04: I liked the FOFBOC exercise.

Researcher: Right. Did anyone else like the FOFBOC as well?

Ham01: Yeah.

Waj03: I liked +2.

Researcher: Right. So Ahm04 and Ham01, your favourite was the FOFBOC. Waj03, your favourite was the +2. Adn20, which was your favourite mindfulness practice?

Adn20: I liked the chest and tummy breathing.

Researcher: Right. That’s interesting. So you all liked different mindfulness practices. So even though you all liked different mindfulness practices, do you think that it was a good thing that you got to try different mindfulness practices?

Waj03: Yeah.

Ham01: Yeah.

Adn20: (Nods).

Ahm04: Yes, because then we could find out which ones we liked and which ones we
found harder. Because I found the +2 very very hard.

**Researcher:** Well that’s a good point Ahm04, because when you do different mindfulness practices you can find out which one you liked the best. Do you all agree with that?

**All:** Yeah.

- **Kha22:** There are a few different types of things (reference to Paws .b mindfulness practices) that you can do. There’s FOFBOC; there’s chest (and tummy) breathing; there’s finger breathing…

**Researcher:** “Okay, so there are different mindfulness practices that my pupils can do?”

**Kha22:** Yes.

**Pupils felt that Paws .b mindfulness practices allowed them to go to a ‘better place’**

- **Adn20:** What I liked about Paws .b was that it was quite calm and relaxing. It felt like that afterwards. A calm place where no one could distract me.

**Researcher:** Right. So you felt like you were in a different place where no one could distract you? How does everyone feel about what Adn20 said?

**Waj03:** I felt like I was in my imaginary friend’s house – a calm place.

**Researcher:** Ham01?

**Ham01:** I felt like I was somewhere else like my best friend’s house or my cousin’s house or a magical place.
- **Adn20:** I liked whenever it (reference to Paws .b) makes you feel calm and like you’re in a world where no one can hurt you.

**Pupils used Paws .b mindfulness practices beyond the classroom**

- **Waj03:** I felt that first of all, for example, I felt so annoyed because I get so annoyed at play time with my friends and with my cousin and after that, when I do mindfulness, I feel like, “I don’t want to do this anymore. It’s so boring.” But after we do it (reference to Paws .b), it actually feels relaxing.

- **Ahm30:** And then, you might be able to, when you’re in bed and you’re moving around and you can’t get to sleep, try and do it (reference to chest and tummy breathing) and then you might calm down.

- **Ahm30:** Because when I got home I wanted to learn more and I wanted to relax even more.

**Far06:** One of my brothers taught me at home.

- **Researcher:** Brilliant. Are there any other ways that Paws .b can help my pupils?

**Ahm30:** It might help them at home as well. Like, if they’re panicking and their mum is telling them to “do this” and “do that”, and it’s their favourite (TV) show, and they start arguing, they might try mindfulness and it will calm them down and they might go do it.

**Researcher:** So Paws .b might help my pupils at school and at home as well?
Ahm30: Yeah.

- Ina25: at home, my brother makes me really angry, he’s really annoying. But then, I calm down myself and tell him to stop. Sometimes he’s nice and sometimes he’s really annoying.

Pupils enjoyed the Paws .b curriculum content and format

- Researcher: So what you’re all saying is that Paws .b has taught you something new as well?

All: Yeah.

- Researcher: Thank you Far06. So, let me know if I’ve got this right. It seems like there are three things: You liked doing the Paws .b practices, you got to learn new things…

Far06: Like flight, fight and freeze.

Researcher: Exactly Far06, like flight, fight and freeze, and you got to learn about all the bits of the brain. Then for the third thing, you had fun – you thought the videos were funny.

Rac20: Yes, but they (reference to the videos) helped us.

Ahm30: Yes, they (reference to the videos) helped us.
- **Researcher:** So you liked the different activities in Paws .b?

  **All:** Yeah.

- **Researcher:** So it’s taught you how to do mindfulness practices like chest and tummy breathing, finger breathing, and FOFBOC, but you feel like you’ve learnt about the brain as well. Is that right?

  **All:** Yeah.

- **Researcher:** Right, so Paws .b isn’t just about mindfulness practices – it teaches you something as well about the brain?

  **Waj03:** Yeah.

- **Researcher:** Okay. So were there some aspects of Paws .b that you did like?

  **Jem29:** Yeah, like when you do about fight/flight/freeze and the tummy and chest breathing.

  **Researcher:** Alright. So you thought that Paws .b was okay because you preferred some of the mindfulness practices to others?

  **Jem29:** Yeah.

  **Researcher:** Okay. So which bits about Paws .b did you like?

  **Jem29:** It was funny when we watched all those videos and when we did fight/flight/freeze.
- **Kha22:** It was nice and you didn’t have to do work.

  **Researcher:** Okay. So did you like that you didn’t have to do work, or did Paws .b seem different to your normal lessons?

  **Kha22:** It felt different because when you close your eyes in lessons it feels weird.

  **Researcher:** Was that a bad different or a good different?

  **Kha22:** Good.

- **Jem29:** There’s no right or wrong in mindfulness so there’s no need to be showing off that they’re right or being really sad because they’re wrong. There’s no right or wrong.

- **Sha23:** [Y]ou don’t feel like doing anything wrong or right.

**Pupils enjoyed learning about the human brain throughout Paws .b**

- **Far06:** I liked how they teach about the brain.

- **Far06:** It was quite fun because it was the first time that we’ve been learning about the brain.

  **Rac20:** And we made one (reference to a model of the brain made up of pupils playing different roles).

  **Far06:** Yeah, we made one (reference to a model of the brain made up of pupils playing different roles).
Researcher: How did everyone else feel about being taught about the brain?

Adn20: I felt quite happy because Science is my most favourite thing and I like to find out about the human body and the brain and all that kind of stuff.

Researcher: Oh good. Ham01?

Ham01: I liked learning about the brain because things like the hippocampus. I liked knowing about that.

Researcher: Right. Ahm04, what were you going to say?

Ahm04: I liked learning about the brain because you don’t really get to learn about the brain until you’re in Year-6 or high school.

Jem29: It’s really interesting about the brain.

Per18: [It (reference to Paws .b) helps you a lot with your learning because you get ideas about brains and you do the subject of brains.

Pupils enjoyed the funny videos throughout Paws .b

Far06: We liked the videos.

Rac20: The videos, they were funny.

Aur05: The chicken! (laughs)
Far06: And the boy that was like, “I want those sweets! Give those sweets! Wahh! Wahhh!”

- Researcher: Okay. Far06, what would you like to tell me about Paws .b?

Far06: You can show them the videos and they will laugh and have fun.

- Ahm04: [T]here are funny video clips that we watched.

Ham01: Oh yeah, the funny video clips…

Adn20: Yeah.

Researcher: So you all liked the funny video clips?

All: Yeah.

- Waj03: What I really liked about Paws .b is that you get to watch funny video clips.

Pupils were instilled with a pioneering sense of pride having received Paws .b

- Ham01: I would say that “if your school doesn’t do it (reference to Paws .b), you can come and do mindfulness with us”.

- Ahm04: I would tell her to “come to Harry Close (Primary Academy) because it is a good school and you should try mindfulness because it calms you down”.

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- **Waj03:** I never knew what it (reference to Paws .b) was and I think that our school is very lucky to do mindfulness and I don’t think other schools get to do mindfulness.

- **Jem29:** I’ll tell them (reference to an imaginary friend at a different primary school) about our school and mindfulness and what we do.

- **Sha23:** I’ve got a way that we should introduce mindfulness to other schools. If we video one class doing mindfulness and send it to a different school, they might like it and they might start doing it in their school.

**Research:** So you think that we could be pioneers and record mindfulness lessons and show them to other schools to see if they would like to do it?

**Sha23:** Yeah.

**Per18:** Yeah.

- **Ina25:** “Come to Harry Close (Primary Academy) and they’ll teach you mindfulness and it’s really good – you should try it.”

- **Tan20:** I think that they should come (to) Harry Close (Primary Academy) because mindfulness is all about your brain and what it tells you to do.

- **Adn20:** She (reference to an actual friend at a different primary school) didn’t even know what mindfulness was, but when she found out about it she started to research about it.
- **Ina25:** And the people (reference to pupils) that don’t get it (reference to Paws .b mindfulness practices), we could teach them and they could get it (reference to Paws .b mindfulness practices), and then they could teach someone else.

Pupils felt that that Paws .b would be applicable to others

- **Ahm30:** If you (reference to the researcher) get so many e-mail and you’re like, “I’ve got to do this! I’ve got to do this!”, you could try it and you might calm down.

**Researcher:** So I could try it Ahm30?

**Ahm30:** Yeah.

**Researcher:** Oh right.

- **Researcher:** That’s right. So before we move on to the next question, is there anything else that anyone would tell their friends about Paws .b? Yes Sha23?

**Sha23:** They should try it (reference to Paws .b). If they like it, they should do it, and then we’ll have people doing it in the whole world.

**Researcher:** Right. So you think the whole world should try mindfulness?

**Sha23:** Yeah.

**Per18:** Yeah. Share the idea.

**Sha23:** Because nearly every person in the world has been angry once or more than once, so they should introduce mindfulness everywhere so if they get angry they can just calm down with mindfulness.
**Researcher:** So you thought that mindfulness was that good that you think it should be everywhere?

**Sha23:** Yeah.

**Per18:** Yeah.

**Researcher:** Right. Do you all agree with what each other have said?

**All:** Yeah.

- **Ina25:** Mindfulness can help adults as well because adults go to jobs and sometimes they get stressed and they could use mindfulness to, you know, get better.

- **Researcher:** So you think that mindfulness would be helpful for adults?

  **Ina25:** Yeh.

- **Ina25:** If we teach our parents (reference to Paws .b mindfulness practices), and our parents teach (reference to Paws .b mindfulness practices) someone else, and that person teaches someone else, then you will go in a circle around the whole world and then no one would be angry or stressed.

- **Tan20:** I think mindfulness can be taught to young children, like my baby sister is two (years-old) and anything I do, she copies me, so I could teach her mindfulness.

  **Researcher:** “Okay, so Tan20, you think that mindfulness is something that can be taught to even young children?”
Tan20: Yeh.

Researcher: “Okay, and one last comment from Ina25?”

Ina25: [A]dults and children can learn it (reference to Paws .b mindfulness practices). If adult teach us, we can teach our mum and dad, and they could teach someone else and all around. And I agree with Tan20, you can even teach babies and people older than you.

Some pupils felt that Paws .b was boring/ confusing

- Waj03: [W]hen I do mindfulness, I feel like, “I don’t want to do this anymore. It’s so boring.” But after we do it (reference to Paws .b), it actually feels relaxing.

- Ahm04: It would be really boring closing your eyes for a long time, but it would be relaxing.

- Waj03: Also, it is a bit boring by putting your feet straight on the floor and closing your eyes.

- Researcher: Ahm04?

Ahm04: It’s (reference to Paws .b) so boring.

Ham01: Yeah, it’s so boring.

Researcher: Okay, is all of it boring or just some of it?

All: No. Different bits.
**Researcher:** Okay. So if we made the improvements that we spoke about, do you think that Paws .b would be better.

**All:** Yeah.

- **Researcher:** Moh22, how would you feel about doing Paws .b again?

**Moh22:** Boring.

- **Moh22:** I didn’t like it because it (reference to Paws .b) doesn’t make any sense. Like, it doesn’t feel like anything and it just makes us relaxed, that’s it.

- **Moh22:** When I go swimming, mindfulness doesn’t even help you – it just stays the same.

**Some pupils felt that Paws .b would have greater utility when they were older**

- **Moh22:** Maybe when I’m older, maybe I might like it (reference to Paws .b), because you tend to get stressed out when you work all the time.

**Researcher:** So you think it might be helpful in the future when you’re more stressed out with work?

**Moh22:** Yeah.

**Researcher:** Well it’s interesting that you feel that Paws .b would be helpful for you in the future. Was Paws .b just not very helpful for you right now?
**Moh22:** (Shakes head).

- **Moh22:** But the adults are going to think it’s so stupid. Like, my sister is like 18 and she’s never been taught that (reference to Paws .b), and she’d think it was so stupid and, “Why would you waste your time doing mindfulness?”

**Researcher:** So you think that adults would think that mindfulness was stupid?

**Moh22:** Yeah, and they’d think, “That’s so stupid. It’s a waste of my time in my job”, and then they’d get fired.

**Researcher:** So you think that your sister would get fired from her job if she did mindfulness at work?

**Moh22:** Yeah, like you have a strict headmaster who tells you to do everything and you get so stressed out and then you’d think, “That’s so stupid – a waste of my time in my job”, and then they get fired.

**Researcher:** So are you saying that your sister has a lot of things to do in her job and that she wouldn’t have time to do mindfulness as part of her job?

**Moh22:** Yeah, like, when she’s older she can do it (reference to Paws .b) because she has more time and space.

- **Moh22:** Why would children understand anything about mindfulness? They don’t know every single part of the body so adults should do it because they know better and they’re grown up and they learn about different experiences, and why should the children do it because they don’t have more experience and education and all that.
Pupils disliked closing their eyes during Paws .b mindfulness practices

- **Researcher:** Okay. Now I think it’s a good time to move on to the next question. Now I know that all four of you said that you liked Paws .b, but was there anything that you didn’t like?

**Far06:** About the closing our eyes.

**Rac20:** People were closing their eyes and then opening them.

**Aur05:** Because, like, your eyes, they can’t always stay closed.

**Rac20:** We wanted to open them, so I just opened them and closed them back down.

**Researcher:** So you didn’t like being told that you had to close your eyes?

**Rac20:** It was aching because we had to do this (demonstrates closing eyes).

**Ahm30:** It was hard because your vision goes all blurry.

**Rac20:** And you can see dots everywhere.

**Far06:** Black dots.

- **Researcher:** So it was something about having to keep your eyes closed that you didn’t like?

**All:** Yeah.

**Aur05:** It made your eyes hurt.
- **Ahm04**: I didn’t like the way that we had to… keep our eyes closed for such a long time.

- **Waj03**: I can’t keep my eyes closed for a long time so I had to keep opening them and closing them.

- **Ham01**: When we’re doing things like finger breathing or FOFBOC or something, we have to keep our eyes shut and I’m just like, “I want to open them…”.

  **Waj03**: That’s how I feel. That’s how I feel sometimes.

- **Ahm04**: I don’t like closing my eyes unless I’m tired because I don’t want to close my eyes unless I’m tired because if you close your eyes, you keep on wanting to open them and because you’re not so tired, you’re not so tempted to close your eyes.

- **Jem29**: I can’t even close my eyes so when Mrs. Beale tells us to close our eyes, I’ll always be opening them.

  **Per18**: Yeah.

  **Jem29**: Because we’re sitting on a chair and closing our eyes, and I’d rather do that in bed.

  **Researcher**: Yes Per18?

  **Per18**: Like we were told to close our eyes and it’s really boring to close your eyes and all you do is just open them and your mind wanders off.
Some pupils disliked the finger breathing Paws .b mindfulness practice

- **Ahm04**: I hated it (reference to finger breathing) because when you’re relaxing you don’t have to do anything – not even put your hand up – and my hand was aching so much.

  **Waj03**: (Laughs).

  **Ham01**: That’s actually true.

  **Ahm04**: It was hard to relax.

  **Researcher**: Okay. So your hands ached when you did finger breathing?

  **All**: Yes.

  **Researcher**: Oh right. Adn20, what did you think about finger breathing?

  **Adn20**: I was in the middle because in the first two (Paws .b) lessons my hand felt quite itchy. But then when I let it go I felt quite relaxed.

  - **Waj03**: It makes you feel really relaxed, but the finger breathing didn’t help me that much.

  - **Researcher**: “Okay. Ahm04, what would you like to tell me about Paws .b?”

    **Ahm04**: That you wouldn’t want anyone to do the finger breathing.

  - **Ham01**: Don’t try the finger breathing
Some pupils disliked the more ‘active’ Paws .b mindfulness practices

- **Researcher:** Okay. So, Ahm04, did you not like finger breathing because it involved actually doing something physical, whereas the FOFBOC and the +2 and other mindfulness practices didn’t and you’re quite still?

  **Ahm04:** It was tiring.

  **Waj03:** It’s tiring and then you have to swap hands.

- **Researcher:** Right. Ham01, what were you going to say?

  **Ham01:** I was going to say that I actually agree with Ahm04 because I was just there like that (demonstrates finger breathing) and I was just like, “let me put my hand down now”. I was staying there for ages and ages and ages without putting it (reference to their hand) down.

- **Ham01:** That’s why I liked the FOFBOC – all you had to do was sit there.

  **Ahm04:** With the chest and tummy breathing, you don’t have to really do something with your hands you just rest them on your tummy and chest.

  **Waj03:** Yeah. And with +2, you have a number and you just sit there adding. You don’t have to do anything else.

- **Ham01:** I don’t like the chest and tummy breathing that much because you still have to hold your hands up. And you have to sit up straight like Mrs. Beale said.

  **Waj03:** Yeah.
Some pupils disliked sitting in chairs throughout Paws .b mindfulness practices

- **Ahm04**: I didn’t like the way that we had to sit in our chairs for such a long time.

  **Researcher**: Oh right. How did everyone else feel about sitting in your chairs to do the mindfulness practices? Waj03?

  **Waj03**: I felt the same as Ahm04. It was really boring.

- **Adn20**: I’d just like to lie down in bed. I just wanted to do it in a bed and not on a chair.

- **Researcher**: Right. Ham01, how did you feel about sitting in a chair?

  **Ham01**: It felt quite tiring because usually when we do stuff, we get to stand up and stuff, and me and Ahm04 hand the books out, so we get to get out of our chairs and we don’t sit there for a long time.

  **Ahm04**: It’s like exercise.

Some pupils were easily distracted during Paws .b mindfulness practices

- **Ahm04**: Sitting and trying to feel relaxed is really hard because there are lots of classrooms around us and there’s lots of noise and we can’t concentrate.

- **Waj03**: And then the noise from outside, like the heel of someone coming, it distracts us so much.
- **Researcher:** “Okay. Ham01, what would you like to tell me about Paws .b?”

**Ham01:** You can do some mindfulness and it might be a little bit distracting.

- **Sha23:** You know when we do the (Paws .b mindfulness) practices, whatever we hear or whatever we feel, we just think of that our and mind wanders off onto a different topic.

**Researcher:** Okay, so was that a good thing or a bad thing?

**Sha23:** A bad thing because we weren’t concentrating.

- **Moh22:** people were like opening their eyes and I was getting distracted so I couldn’t feel anything.

**Researcher:** So you found it hard to focus on your bodily sensations because you found yourself being distracted by other pupils?

**Moh22:** Yeah.

- **Moh22:** Yeah, because if you’re, like, doing mindfulness, you’ll have like a thing that distracts you from doing mindfulness, like Mrs. Beale talking, and you get distracted awake.

**Researcher:** So you found it quite difficult to focus on the sensation of breathing when Mrs. Beale was talking?

**Moh22:** Yeah.
- **Moh22:** [I]n the middle of mindfulness if you need to go to the toilet really quickly, it’s just going to distract you.

**Some pupils disliked learning about the human brain within the Paws .b mindfulness curriculum:**

- **Per18:** To be honest, I didn’t like doing the brain things.

  **Researcher:** You didn’t like learning about the brain?

  **Per18:** Yeah. I just didn’t like it.

- **Researcher:** Okay. So, Jem29, what didn’t you like about Paws .b?

  **Jem29:** [T]he brain, because only someone who wanted to be a scientist would want to learn about the brain and I don’t want to be a scientist.

**Pupils wanted the option of keeping their eyes open during Paws .b mindfulness practices**

- **Researcher:** So you would you have preferred to have your eyes open but look at your feet?

  **All:** Yeah.

  **Aur05:** You know when you close your eyes for long, your eyes hurt and you feel like opening them.

  **Researcher:** Okay, so what you’re saying is that you didn’t like that you had to close
your eyes and that you might have preferred to lower your gaze and look at your feet, for example?

**Far06**: Yeah.

**Aur05**: If you look at your feet then you can still look.

**Rac20**: You can just do that (demonstrates lowering gaze, looking at feet and shielding eyes with hands).

- **Waj03**: I don’t think that we need to change all of it. What I would change is, like, you do the FOFBOC, and you stay still, but you keep your eyes open. I don’t like it for too long.

- **Researcher**: Okay, so you mentioned finding it difficult to keep your eyes closed for a long time. Does anyone have an idea about how this could be improved? Adn20?

  **Adn20**: Well it’s all like you’re in a blank place and you can’t even see. I just want to look at a nice image.

  **Researcher**: Right, so rather than closing your eyes, you just wanted to look at a nice image, say either or the board or in front of you?

  **Ham01**: Yeah.

  **Adn20**: Yeah. Something calm and peaceful.

- **Researcher**: Okay. Ham01, how would you improve the bit about having to close your eyes?

  **Ham01**: When we’re doing mindfulness, when we’re doing anything like the
FOFBOC or something, you can open your eyes if you want.

**Researcher:** So you’d like to have the choice to open your eyes if you wanted to?

**Ham01:** Yeah.

- **Researcher:** Okay. Waj03, how would you improve the bit about having to close your eyes?

**Waj03:** I just don’t like it because when I close my eyes it’s just like completely blank and then I think that I’m blind and that I can’t see anything. So then if you leave your eyes open but stay still and don’t talk then you won’t get distracted or start laughing.

- **Researcher:** Okay, so are you all saying that you’d like to have the options to keep your eyes open if you wanted and maybe look at a nice calm picture or something like that?

**All:** Yes.

- **Researcher:** So would you have preferred to have had the choice to keep your eyes open if you wanted to?

**Per18:** Yeah.

**Jem29:** Yeah.

**Per18:** But just looking at the floor.

**Researcher:** Sha23?
Sha23: I agree with Jem29 and Per18.

Some pupils wanted the option of not having to sit in the same chair during Paws .b mindfulness practices

- Researcher: So if we focus first on sitting still for too long, how could that be improved? Ahm04?

Ahm04: Stand up a bit longer.

Researcher: Okay. Adn20?

Adn20: Maybe we could put something else into it (reference to Paws .b) that would be interesting, like swapping part of sitting so that you can sit on your legs or…

Researcher: Okay. So you could change your sitting position rather than having to sit in the same position?

Adn20: Yeah.

Researcher: Okay. Ham01, how would you improve the part about sitting still for too long?

Ham01: Like, you can stand up when you want, or when where’re done with the mindfulness practice, we can swap around and then do FOFBOC, and then we can move around again, and then we can sit on different seats to get up once in a while.

Some pupils wanted to change the name of Paws .b
- **Researcher:** Is there anything else that could be improved about Paws .b?

  **Far06:** Change the name.

  **Rac20:** Yeah.

  **Ahm30:** Yeah.

  **Rac20:** It should be ‘relaxing and calm’.

  **Far06:** Like Paws .b sounds a dog paw.

  **Ahm30:** Yeah. And we’re not talking about dogs.

  **Researcher:** So you’d like to change the name.

  **Far06:** Yeah.

  **Rac20:** Relax and calm.

  **Researcher:** Why would you like to change the name?

  **Ahm30:** Because it sounds like we’re doing about dogs.

  **Far06:** (laughs).

  **Researcher:** Okay. So you don’t really understand why it’s called ‘paws’ .b, because it makes you think that you’re going to be doing something about dogs?

  **All:** Yeah.

- **Researcher:** What do you think would be a good name for it (reference to Paws .b) then?
Far06: ‘Relax .b’.


Researcher: So, I can see that you didn’t understand why they used ‘paws’, but did you understand ‘.b’, as in stop and be, as in enjoy being present?

Aur05: No, it should be what Rac20 said.

Researcher: So you didn’t understand the ‘.b’ bit either?

All: No.

Researcher: So are you all saying that you didn’t understand the name at all?

All: Yes.

Researcher: So you think that something to do with ‘relaxing’ would be a better name.

Rac20: Yeah, something to do with relaxing.

Far06: Yep.

Ahm30: It could be called, ‘Relax. Have peace’.

Far06: ‘Calm .b’.

Rac20: Yeah! ‘Calm .b’!

Researcher: Okay, so would you understand the ‘.b’ part if there was a word like ‘calm’ before it?
All: Yeah.

Far06: Or ‘.b Calm’.

Rac20: Yeah.

Some pupils wanted to include writing activities within Paws .b

- **Researcher:** Okay. So before we move on, is there anything else that you didn’t like about Paws .b? Yes Waj03?

  Waj03: The thing that I didn’t like about Paws .b is that we didn’t get to actually make anything. Like, first of all, we wrote on a post-it note how we felt, but then at the end we wrote again and that’s how we felt after mindfulness, so I’d feel like doing something extra.

  **Researcher:** So does that mean that you’d like to do more writing?

  Waj03: Yeah.

  **Researcher:** Okay. So we could improve Paws .b by including some more writing activities like you do in class?

  Waj03: Yes.

Some pupils wanted to extend the length of Paws .b mindfulness practices

- **Sha23:** I didn’t like it when we only did the breathing for 1-minute.

  **Researcher:** So do you think that the mindfulness practices need to be longer?
Sha23: Yes, like two or three minutes.

- Sha23: You get a longer time to do the practices.

- Researcher: [Y]ou’d want to spend more time doing practices?

Sha23: Yeah.

- Per18: [W]hat’s the point in doing 5-minute practices when you need to do more than 5-minutes really, like half-an-hour?

Researcher: So you’d rather spend longer on a practice, like half-an-hour?

Sha23: Yeah.

Per18: Yeah.

Some pupils wanted to extend the length of the Paws .b curriculum/ change the format of the Paws .b curriculum

- Sha23: [M]indfulness needs to be in the morning or the afternoon – it should be for half a day. It should be longer.

Researcher: Okay, what does everyone else think about Sha23’s suggestion?

Jem29: I disagree with Sha29 – it should be shorter time but more weeks. You could do it twice a week so it can be shorter.

Researcher: So you think that the lessons should be shorter, say half-an-hour, but
more frequent.

**Jem29:** You can do it twice a week.

**Sha23:** That’s what I meant.

**Researcher:** Oh, so that’s what you meant Sha23?

**Sha23:** Yeah.

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**Per18:** [W]hat’s the point in just having 6-weeks (of Paws .b)?

**Researcher:** Well what does everyone else think about Paws .b going on for longer?

**Sha23:** Yeah.

**Researcher:** So you think it would be a good idea?

**Sha23:** Yeah.

**Jem29:** I disagree. We can have shorter lessons, like three lessons a week, so by the time it’s six week, it would be 18 lessons or something.

**Researcher:** So you (reference to Jem29) think that we should do three shorter lessons per week but still over 6-weeks?

**Jem29:** Yeah.

**Ghu31:** Yeah.

**Researcher:** But Per18, were you saying that even after 6-weeks, you want the Paws .b lessons to keep going?
**Per18:** Yeah.

- **Tan20:** You should do it (reference to Paws .b) from 09.00 till 12.00 so that all your stress you can get out of your brain.

**Researcher:** So Tan20, you think that Paws .b should be done for longer and in the morning?

**Tan20:** Yeh.

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Some pupils wanted a greater variety of Paws .b mindfulness practices

- **Rac20:** I want to learn how to do the body scan.

- **Sha23:** They need to add more (Paws .b mindfulness) practices.

- **Per18:** We need more (Paws .b mindfulness) practices.

**Ghu31:** I agree with Per18 because when we do more practice, we can learn about more mindfulness and everybody can be cooled down.

- **Jem29:** They can add in more (Paws .b mindfulness) practices.

**Researcher:** Okay Jem29, what do you think would be good practices?

**Jem29:** Something we can act out, so we can pretend that we’re being bullied and we need to act out and pretend that we’re really sad and stuff, and then think about what
we would do.

**Researcher:** So you think a bit of role play could be helpful to practice the different situations in which mindfulness could be helpful?

**Jem29:** Yeah.

**Researcher:** Okay. Sha23? You nodded.

**Sha23:** (Nods).

**Researcher:** Okay. Per18?

**Per18:** I agree with Jem29. You need more practices for your health.

**Researcher:** So you think that doing more practices and different types of practices would be helpful?

**Per18:** Yeah.
Appendix 31 – Interview transcript: Experimental teacher (Time-1)

Researcher: So, you’re happy for me to record the interview?

Experimental teacher: Yes.

Researcher: And you’re happy that when I transcribe the interview, it will be done so anonymously?

Experimental teacher: Yes.

Researcher: Great. So, how do you think Paws .b went?

Experimental teacher: The children seemed to really enjoy it (reference to Paws .b). They (reference to the pupils) were excited about it whenever they knew that that (Paws .b) lesson was going to happen. They seemed to be able to talk about it afterwards and they wanted to discuss it. So it seemed to work quite well for them.

Researcher: Yeah.

Experimental teacher: I didn’t see any of the sessions, but they (reference to pupils) seemed to really enjoy it and I know Mrs. Beale (MT) said some of the children who can be silly were well-behaved during the lessons – they got really stuck into it.

Researcher: Yeah.

Experimental teacher: I think it’s unfortunate though – the fact that it’s (reference to Paws .b) not with the class teacher because you can’t reinforce it during lessons, and I know we didn’t want that to happen in case I then started to take them on the wrong kind of path.

Researcher: Yeah.

Experimental teacher: But not being the (mindfulness) teacher who’s taught them the Paws .b, you can’t reinforce it and that affects then how effective it can be because you can’t say,
“Oh, why don’t we try out this…?” So it was kind of like, they (reference to the pupils) would do it on a Monday for an hour, and then there was no talk about it for a whole week till the following Monday, and I think it would maybe be more beneficial if it was reinforced continuously.

**Researcher:** I hear what you’re saying: That some of the utility of the Paws .b lessons, in terms of reinforcing the lessons throughout the week, was lost because you weren’t the mindfulness teacher.

**Experimental teacher:** Yeah, which is quite unfortunate. And also, I think, to do it (reference to Paws .b) for six weeks and, as you’ve seen, the children really would like to continue on with it (reference to Paws .b). And if you do something for six weeks, how much can you change as a person? Whereas, if you’d done it (reference to Paws .b) for a whole year, it could potentially have so much more benefit. Really, really sort of embed that different way of thinking.

**Researcher:** So do you feel that Paws .b was a little ‘whistle stop’?

**Experimental teacher:** Yeah, a little bit. Obviously, I wasn’t in any of it (reference to Paws .b), but I think that for it to have a real effect, it would need to be over a year. It would have to be done every week for a prolonged period of time.

**Researcher:** Yeah.

**Experimental teacher:** Because I worry that, the data I collected. It’s very hard in 6-weeks to show that there would be any change. Like, I’ve had them (reference to the experimental group) since September (2013), and I’m, only now, seeing changes in their personalities and changes in the ways that they’re working. But that was in September (2013), so we’re talking half a year, really, it’s taken them to get used to the way I teach and things like that.

**Researcher:** Yeah.

**Experimental teacher:** However, I have overheard before they would have mindfulness, especially when there was talk of that being the last (Paws .b) lesson, they (reference to the
pupils) were like, “Oww. We really liked mindfulness.” Yeah, I think they really would like it (reference to Paws .b) to continue.

**Researcher:** Right.

**Experimental teacher:** I suppose, as well, it’s (reference to Paws .b) a lesson where they don’t see it as a lesson. It’s not lots of literacy. So it’s a time (reference to pupils) for them to learn about *them*. They’re not learning something that we’re going to test. It’s just about learning about *you* and doing things for *you*.

**Researcher:** Yeah. Yeah. Yeah.

**Experimental teacher:** It’s not a case of, “If you’re really intelligent, you’ll be really good at this.” Or that there is no *good* or being *good* at it (reference to Paws .b). The kids probably really liked that part of it as well.

**Researcher:** Right. That’s interesting.

**Experimental teacher:** Knowing my class (reference to the experimental group), there are a lot of children in there, a lot of the boys especially, are known to be really childish. They have strops. They have tantrums. That sort of behaviour. And it’s that sort of idea, “Oh, I’m dumb. I’m stupid. I can’t do this.” And they’re (reference to the pupils) all well able to do the tasks that they’re given because it’s pitched at their level. You know, I’m not asking them to do beyond what Year-4 would be expected to do. Yet they still have this kind of attitude. But, they all seemed to have really had a good go at doing the mindfulness and there seemed to be no issues. So, I wonder: Is it because they realised that… I think Mrs. Beale (MT) made it very clear for them that, “There is no right or wrong in this. It’s just about you and having a go.” So yeah, I suppose it (reference to Paws .b) builds their confidence in something else.

**Researcher:** That’s a very interesting idea.

**Experimental teacher:** And I think, if they can see that adults do that type of thing (reference to mindfulness) and it’s (reference to Paws .b) something that they could practise with people at home. Or you can have an after school club where you can be teaching others
and reinforcing what they’ve learned. It would have been nice to do something outside of it (reference to Paws .b) for them (reference to the pupils) to get opportunities to use it (reference to mindfulness) in different settings. It will help them.

**Researcher:** So Paws .b could have been improved by it being more embedded within school?

**Experimental teacher:** Yeah. Just so that they could have some sort of purpose to it. So they would see that there’s a reason that people do this (reference to Paws .b). I think to get the best out of it (Paws .b), it really would need to be more embedded or it would really give the children an opportunity to see if they wanted to embed it. Yeah.

**Researcher:** Brilliant. So, the next question is: In what ways do you think that Paws .b helped your pupils?

**Experimental teacher:** You can see that some of the children have changed in their behaviour and some of the more troublesome children have become a little bit less stroppy. But then it’s hard to know if it’s (reference to pupils’ behavioural improvements) to do with other factors or whether it’s to do with mindfulness (reference to Paws .b).

**Researcher:** Yeah.

**Experimental teacher:** And I think not being aware of what they were taught each week in mindfulness, maybe that did affect… maybe I would have been able to see more of if it’s effective with behaviour.

**Researcher:** Yeah.

**Experimental teacher:** I think for some of the children it possibly has helped them to be more calm maybe; not act in such an aggressive way. Maybe being a little bit more like, “This is me – I don’t really feel that I need to act like somebody who’s two to deal with situations.”

**Researcher:** Right.
Experimental teacher: I don’t really know if I can answer that question fully. I don’t know if it (reference to Paws .b) would have been better if I had stayed in for each lesson to maybe observe. Maybe that’s what you need to do to be able to see. But the only thing is, then I would have been tempted to make comments throughout the week. But yeah, as I say, without knowing what they (reference to the pupils) did each week, it’s hard to know if it (reference to Paws .b) helped and if you could actually see them using it. The only bits I always used to walk in during were like the breathing bits right at the end, you know.

Researcher: Right.

Experimental teacher: You know, there were simple little things like Nis11 was really scared by going swimming. Nis11 became very anxious all the time, but they are now in the water and Nis11 is doing alright. Nis11 is a lot more confident (with reference to swimming). But is that just because we’ve been going swimming for longer and would that have happened anyway (i.e., regardless of Paws .b)? I suppose it’s really hard to tell.

Researcher: It is. Definitely. And that moves us on nicely to the next question about whether there are any example of positive changes that you have seen in your pupils?

Experimental teacher: Yeah. Like I’ve said, Nis11 who seems to be much calmer about going swimming. Also, Nis11 had anxieties about going to the toilet – just that it was a scary place whenever they went, so Nis11 wanted somebody to go with them and now it’s okay for that person to stand outside and not go into the toilet with Nis11. So Nis11 is a little bit braver. So I don’t know if that’s because Nis11 feels a little bit more confident.

Researcher: Right.

Experimental teacher: And then Moh15, who just always seemed to be away in another world during lessons. You would ask Moh15 a question and they were never really able to respond with an answer. Even within small group work with the Primary Learning Mentors, they found the same thing – Moh15 would never be listening, they weren’t getting involved in any of the lessons. That was in literacy and numeracy – it was in everything. There was nothing that seemed to interest Moh15 like they were in another world. And since Christmas
Moh15 is listening all the time; Moh15 is really involved in all of the lessons; Moh15 had made loads of progress in numeracy; Moh15 has made some progress in literacy. I don’t know… that, again, I don’t know if there was something at home that’s now changed, but Moh15 is definitely a very different child now. It’s great.

**Researcher:** That’s amazing. Yeah.

**Experimental teacher:** Ikr04, like I say, they used to be a child who became very angry very easily. Especially in the last week or two (reference to the final two weeks of Paws .b), instead of becoming angry he just cries now. I’m not sure whether you’d consider that to be something positive or not, but at least he’s showing his emotions possibly in a more honest way, rather than just becoming angry and not being willing to speak to somebody. Ikr04 is still angry but he’s showing it in a different way. But when I spoke to one of the teaching assistants who works with Ikr04’s brother’s class, they said that the same thing happened with Ikr04’s brother, so I can’t tell if this is something different in both of them, or maybe Ikr04 changed (how they responded to anger) which made their younger brother change (how they responded to anger). You don’t know if it’s a knock-on effect (of Paws .b) in that way.

**Researcher:** It’s nice to know that there are three pupils who you can think of off the top of your head who have displayed positive changes that have coincided with the introduction of Paws .b.

**Experimental teacher:** And like Rac20 is a lot more positive. They’re a lot more willing to try things. Rac20 is still a little bit stroppy and still acts a little bit immature, but Rac20 has improved. But again, you don’t know, “Is that (reference to Rac20’s increased openness to experience) to do with other things?” The fact that Rac20 really is growing up or what.

**Researcher:** Yeah.

**Experimental teacher:** But I suppose it (reference to Paws .b) possibly has helped those children who are just nice, pleasant children. The nice girls who are just like, “Ohh – that was a really nice activity. I really like to have a little bit of time to think”. For them children as well, it’s harder to see an effect on those children who were always ‘good’ and who are
always working and hard and who always do the right thing, because if you’re always doing the right thing, it’s very hard to show… well, “What are you going to show me?” You’re already a good student. You already try. It’s hard to measure how that (reference to Paws .b) affects them without thinking about them and their personalities. It has possibly changed their ways of thinking about things and made them much calmer, but it’s difficult to tell with those children.

**Researcher:** Definitely. So anything else about positive changes in your pupils as a result of Paws .b?

**Experimental teacher:** No, I don’t think so.

**Researcher:** Okay. So, next question: In what ways do you feel that the Paws .b mindfulness programme has helped your teaching?

**Experimental teacher:** I think it’s hard for it (reference to Paws .b) to have an impact on my teaching because, apart from the information that you provided at the beginning of the research, I don’t have any other information about it, so I don’t really know how it would impact on my teaching without me teaching it.

**Researcher:** Yeah. I understand.

**Experimental teacher:** I could see how it would have a lot of positive effects on your teaching.

**Researcher:** Right. So am I hearing that Paws .b is something that you feel a class teacher would need to do with their pupils in order for it to impact their teaching?

**Experimental teacher:** Yeah, I think so. I think I’d definitely need to… there is an opportunity for us (reference to class teachers) within school to do (an adult) mindfulness (course), but for me, it doesn’t suit on that day. But I think it (reference to teaching Paws .b) would be a good opportunity to use it. Like, I don’t think that you would have to have a specific mindfulness lesson where you said, “This is our mindfulness lesson.” But I think it could help…possibly you could use some of those (Paws .b mindfulness) strategies
throughout your lessons without having a separate, “This is mindfulness.” I think it’s something that you could teach a little bit (of) all the time. So if we were talking about something that was to do with your emotional side and how you feel, you could then apply it (reference to Paws.b) then.

**Researcher:** Yeah.

**Experimental teacher:** I suppose you could be teaching it to your class and that could be beneficial. But I think, also, just the teacher knowing about it. So the (class) teacher going on the (Paws.b training course) and maybe not specifically teaching mindfulness, but knowing how that (reference to each Paws.b lesson) makes people think and how that may affect the children. Yeah, I think that would (positively) affect your teaching.

**Researcher:** Yeah.

**Experimental teacher:** And with the swimming, when we (reference to the experimental group) started going swimming, I noticed that they (reference to the pupils) started saying that they felt really sick. And in those situations it would be really helpful to use Paws.b and explore why they are feeling that way and what makes them feel like that and how we can manage difficult feelings. It (reference to Paws.b) would be part of your teacher toolkit.

**Researcher:** Yeah.

**Experimental teacher:** Because, really, it’s (reference to mindfulness) is a skill that you continuously learn. And if it’s something that the children learn really early on you learnt ways to deal with things, because a lot of children maybe don’t have somebody at home who understands why their kid is getting upset about pressures in school.

**Researcher:** Absolutely. It’s a skill for their independent use.

**Experimental teacher:** And you look in your class at children like Nis11 who has anxiety issues about going to the bathroom and literally was not going all day long he was so scared. And you’ve got children like Beg19 who obviously have anxiety issues and choose not to
speak in school. If from an earlier age they had had an understanding of why they feel certain ways (reference to receiving Paws .b), they could deal with anxiety in a different way.

Researcher: Yeah. So you feel that Paws .b would be helpful for children with anxieties?

Experimental teacher: Because at Primary School you have a lot of children who already have those signs of anxiety issues and stress and, yeah, some kids become really, really stressed.

Researcher: Yeah.

Experimental teacher: And, yeah, I think it (reference to Paws .b) could be taught across Key Stage 1 and 2.

Researcher: Like a spiral curriculum?

Experimental teacher: Yeah. I mean, obviously, you wouldn’t be telling Year-1 about the brain, but it’s suitable for Year-4, so as you go up the older school years, it would possibly really help them. So yeah, I think it would be beneficial for all. I think it (reference to Paws .b) would be a life skill.

Researcher: Yeah. Brilliant. So, the next question is: Do you feel like Paws .b caused any problems for your pupils?

Experimental teacher: I don’t think it caused them any problems, no. I can’t think of anything that would have caused them any problems… nope.

Researcher: Okay. Did Paws .b cause any problems for you as a teacher?

Experimental teacher: I don’t really think so. In a way, it’s (reference to Paws .b) a timetabling issue. Year-4 is a very difficult year. It took up, basically, one afternoon because Mrs. Beale (MT) came at 14.00 to 15.00, which means you can’t do anything for half-an-hour before or half-an-hour after. So although it didn’t affect me in any way – it was nice to have
the spare time when Mrs. Beale had my class, it did mean that I was stuck because we don’t have a lot of afternoons free.

**Researcher:** Right. So timetabling could have been more rigorous?

**Experimental teacher:** Yeah.

**Researcher:** Anything else in terms of problems that Paws .b caused for you as a teacher?

**Experimental teacher:** Erm, no I don’t think so. I suppose, in a good way it made me think about, you know every week when I had to do the Quality of Work Produced in Class questionnaire, you don’t look at that on a weekly basis – you don’t do a Spread Sheet, so you don’t see, “Oh yeah, this week was good.” So it made you think about their quality of work.

**Researcher:** Well I’m glad that you managed to derive something positive from an otherwise arduous task.

**Experimental teacher:** Yeah.

**Researcher:** Well we’re coming towards the end now. Is there anything else that you would like to feed back about your experience of Paws .b?

**Experimental teacher:** Erm, it’s a nice idea that Paws .b would become part of school life. If a school had the right attitude to it (reference to Paws .b), it wouldn’t be a case of, “Oh, can we fit it in the curriculum this week?” It could be another lesson that would be seen as a valued lesson.

**Researcher:** Yeah. And I suppose you’ve answered my next question really, but do you think that Paws .b is something that the school should do again?

**Experimental teacher:** Yeah I think so. But I think for it (reference to Paws .b) to be beneficial it needs to be over a long period of time and I really do think that you would need it to be the class teacher (who delivers Paws .b) for it to have an effect. If the school was to
do it (reference to delivering Paws .b again), it would need to be a whole-school approach and it would need to be a continuous programme for it to be of benefit.

**Researcher:** I think those are fair observations.

**Experimental teacher:** And that just is so that it (reference to Paws .b) can be the best that it can be.

**Researcher:** Brilliant. Is there anything else that you would like to add?

**Experimental teacher:** No thank you.
Appendix 32 – Interview transcript: Waitlist control teachers (Time-2)

Researcher: So you’ve both said that you’re happy for me to record the interview?

First waitlist control teacher: Yeah.

Second waitlist control teacher: Yeah.

Researcher: And you’ve both happy that when I transcribe the interview, I will do so anonymously?

First waitlist control teacher: Yeah.

Second waitlist control teacher: Yeah.

Researcher: Great stuff. So, first question: How do you both think Paws .b went?

First waitlist control teacher: Do you want to make a start, because it would probably be easier for you say?

Second waitlist control teacher: Well, a lot of them (reference to the participants) seem more focussed. A lot of them seem to be putting their mindfulness approaches into practice – I’ve seen quite a few sat there like this (demonstrates putting their hands on their lap, their feet flat on the floor and closing their eyes).

Researcher: Interesting.

Second waitlist control teacher: Moh22 asked if she could practise mindfulness and I said, “Yes”. Which was nice.

First waitlist control teacher: That’s nice…

Researcher: That is nice.
Second waitlist control teacher: And I’ve suggested that kids who are prone to being a little more volatile, let’s say, kind of sit down and practice mindfulness.

First waitlist control teacher: It’s very interesting that Moh22 is doing it (reference to Paws .b mindfulness practices), because Moh22 is very self-critical and Moh22 is a very nervous child. So that obviously is a coping mechanism for Moh22, which is really good.

Second waitlist control teacher: I think that’s nice for her actually.

First waitlist control teacher: Because at the beginning of the year, Moh22 didn’t speak at all – they were really shy and quite reserved.

Second waitlist control teacher: Moh22 was saying to Mrs. Beale (MT), “How can I practise it (reference to Paws .b mindfulness practices) at home? If I don’t want to get out of bed, can I do it when I’m laying down still in bed?” And she (reference to Mrs. Beale) was just like, “Yeah. Yeah. Yeah. Just change it.” So they (reference to Moh22) were actively taking an interest, which was nice.

Researcher: Yeah.

Second waitlist control teacher: A lot of them (reference to the participants) enjoy it (reference to Paws .b) during the session, but wouldn’t necessarily venture into doing it (reference to Paws .b mindfulness practices) unless they were prompted.

Researcher: Yeah.

First waitlist control teacher: I think Tan20 as well, it’s (reference to Paws .b) taught them to recognise feelings, because particularly with swimming, Tan20 was very frightened. But one (swimming) session, Tan20 said to me, “I know I’m frightened, but I’m going to have a try and it’s okay to be frightened.” And I was like, “Yeh. Great. Go for it!”

Researcher: Was that a recent development in Tan20?

First waitlist control teacher: Yeah, it was whenever this (reference to Paws .b started).
Second waitlist control teacher: Yeah, she’s (reference to Tan20) starting to, which is nice.

First waitlist control teacher: Especially when Tan20 got in at the deep end.

Researcher: So am I right in hearing that Paws .b has had more impact upon pupils who have been experiencing difficulty in school?

Second waitlist control teacher: Yeah. From the kids that [the first waitlist control teacher] has told me about as well, yeah. Yeah, mainly I’d say.

First waitlist control teacher: I’d agree with that, yeah.

Researcher: So for pupils who haven’t been experiencing difficulty in school, how did they respond to Paws .b?

Second waitlist control teacher: They just took it in their stride.

First waitlist control teacher: Yeah, with everything else.

Second waitlist control teacher: Yeah.

Researcher: So is there anything else, in general, that you would like to feedback about how Paws .b went?

Second waitlist control teacher: They (reference to the participants) talk about it a lot.

First waitlist control teacher: That’s good.

Second waitlist control teacher: Yeah. Which is nice. “Oh, is [researcher] in today?”

First waitlist control teacher: I’m just wondering, obviously because I don’t see the children that much… Do they bring it (reference to Paws .b mindfulness practices) in to class
a lot then? Do they use it in the afternoons, say, or does anyone ask, “Can I do mindfulness now?”

Second waitlist control teacher: Erm, on the odd occasion. More thoughtful children, like Moh22 would. And I would suggest, “Oh, take five minutes.” If Moh22 wants to put it (reference to Paws .b mindfulness practices) into practice, she can.

First waitlist control teacher: Yeah.

Second waitlist control teacher: I think, as time progresses, they might ask more (reference to the fact that Paws .b had ended).

First waitlist control teacher: Like, it become a habit?

Second waitlist control teacher: But as it’s (reference to Paws .b) week to week, and it flies by for them, so it doesn’t necessarily click in their from them to think, “Oh right. I want to do that.”

Researcher: Yeah.

Second waitlist control teacher: So I think the constant reminder, but the choice of whether to do it (reference to Paws .b mindfulness practices). And then if they (reference to the participants) do it and they feel it impacts upon them, if it makes them more relaxed, it will make them want to do it again I guess.

Researcher: So something to keep Paws .b going, so it’s not just, “Start.” “Stop.” Something on-going?

Second waitlist control teacher: Yeah.

First waitlist control teacher: Yeah.

Researcher: So, [first waitlist control teacher], with you only having 5-minutes left, I’m just looking through my interview schedule to see if we could jump to the questions that would be
most relevant to you both before you have to go. Do you think Paws .b caused any problems for your pupils?

**Second waitlist control teacher:** I don’t think so. No. I didn’t notice anything as a result of it (reference to Paws .b).

**Researcher:** And did Paws .b cause any problems for you as class teachers, because [first waitlist control teacher], you did the baseline and Time-1 assessments, whereas you [second waitlist control teacher] will be doing the Time-2 and Time-3 assessments, so the data collection ‘burden’ was half and half?

**First waitlist control teacher:** I didn’t find it particularly difficult.

**Second waitlist control teacher:** No.

**First waitlist control teacher:** And it would be interesting, actually, I wouldn’t mind seeing the data.

**Second waitlist control teacher:** Yeah.

**Researcher:** Well I’m glad that Paws .b wasn’t problematic for you.

**Second waitlist control teacher:** I think the only difference in the kids, the main difference, was them adjusting to me.

**First waitlist control teacher:** Yeah.

**Second waitlist control teacher:** So I think any differences wouldn’t be reliant on that, but it was a factor. You know, the fact that they were so much more used to you (reference to the first waitlist control teacher) being there, having had you since September (2013), not that they would have impacted in any huge way, but it may have had a small impact, perhaps.

**Researcher:** So do you think that was a factor? Was there a transition that you felt as a class teacher?
Second waitlist control teacher: Yeah, slightly. I mean, they kind of varied week to week.

First waitlist control teacher: But I think that’s normal.

Second waitlist control teacher: Yeah.

Researcher: Yeah.

First waitlist control teacher: It would be interesting if we were going to introduce this (reference to Paws .b) next year because all children worry about coming into Year-4 because they have to swim. That’s a really big thing for them. And lots of them fret at the end of Year-3 and that’s what they really worry about. That’s what parents worry about. So it would be interesting if this was introduced either at the end of Year-3 or the beginning of Year-4 as that coping strategy.

Second waitlist control teacher: Yeah.

Researcher: So from your experience of Paws .b, is it something that the school should do again?

First waitlist control teacher: Definitely.

Second waitlist control teacher: I think so. Especially transitionally, as you said, the ‘gap’ between Year-3 and Year-4, because as their thoughts begin to mature more, I think they encounter a lot more worry, even if it is worry that we would perceive as not that serious, but in their heads, they might see it as something that makes them unhappy or something that they don’t feel that they can share. So I think something through that maybe, even just reassurance.

First waitlist control teacher: Yeah. I’d agree with that.

Second waitlist control teacher: As you were saying, making them think that being scared is okay, because a lot of them are scared of being scared.
First waitlist control teacher: Yeah definitely. And that (reference to Paws .b) could carry on throughout Key Stage 2 then because there are SATs, because kids in Year-6 know that they’ve got to go to high school and they’ve got to do SATs.

Second waitlist control teacher: That’s what I thought.

Researcher: Yeah.

First waitlist control teacher: It’s really helped me as an adult, so I can’t see why it won’t have a positive impact on the children.

Researcher: Yeah.

First waitlist control teacher: Right, can I go?

Researcher: Yes. Thank you for your input.

*** The first waitlist control teacher leaves ***

Researcher: Okay, so back to you [second waitlist control teacher]. Do you feel that you’ve fed back everything about how you thought Paws .b went in general?

Second waitlist control teacher: Yeah. Definitely. But I’m now thinking that I’m going to go to the mindfulness drop-in sessions (for adults) because I’m really interested to know what it would be like from an adult perspective.

Researcher: So has Paws .b intrigued you?

Second waitlist control teacher: Yeah. Yeah. It really has. Because I wanted to do it (reference to mindfulness) before but I couldn’t, and I’d really like to do some (mindfulness) myself with the kids, I mean, they know more than I do at the moment, you know. But even if it’s just the odd 10-minutes before lunch or before home time, just to bring them back.
Researcher: Yeah.

Second waitlist control teacher: But I think a lot of them (reference to the participants) need to know how to cope with minor issues that they think are issues, rather than just coming to me: “There’s something wrong. There’s something wrong.” Because I can’t deal with a lot of it if it’s something that they’re worried about. We need to equip these kids with ways of dealing with things.

Researcher: Brilliant. So, next question: In what ways do you feel that Paws .b supported your teaching?

Second waitlist control teacher: Even when I sat at lunch doing the Attention Checklist, I found I was looking out for a lot of those things anyway. So I’ve been looking at engagement and attention and following instructions, because I didn’t know if a lot of that was, kind of, “We’ve got a new teacher and we’re just going to push it and not do what we’re supposed to do.” I was looking for their reaction to change and different things as well. That’s a big thing – I mean, no one really likes change. Kids, they can get unsettled by different things.

Researcher: Yeah.

Second waitlist control teacher: And I think having such a big concept (reference to mindfulness), like a new concept introduced to them, I think they (reference to the participants) did cope quite well with that. And yeah, they did talk about it a lot.

Researcher: Yeah.

Second waitlist control teacher: I’m still trying to get to know them and what makes them tick, and how to help them really, so…

Researcher: So we’ve already touched onto Paws .b not causing any problems for your pupils or you as the class teacher?

Second waitlist control teacher: No, no actual problems, really. I don’t think. I mean, I think it (reference to Paws .b) tapped into their curiosity as well, and that’s a really good
thing. I actually think they thought, “This is different.” Not necessarily, “I can use it,” but, “What is it?” Because they are naturally intrigued, as kids, by anything new.

**Researcher:** Yeah. So Paws .b was seen as different?

**Second waitlist control teacher:** Yeah. And even at the level of, Mrs. Beale (MT) is a figure of authority in school and she’s always there. I’m just trying to think if it would have been different if [the head teacher] had led it (reference to Paws .b). It’s interesting, because they’ve (reference to the participants) got these perceived ideas about members of staff, but I think it was nice with Mrs. Beale because she’s around and they don’t necessarily have direct contact with her, so I think that in itself is intriguing for them. “Oh, a new person. What are they like?”

**Researcher:** And then for you as well – no problems for you as a teacher as a result of Paws .b?

**Second waitlist control teacher:** No. No. Just remembering to fill in the checklists and stuff (laughs).

**Researcher:** Yes, thank you for that. So, anything else that you would like to feed back about Paws .b?

**Second waitlist control teacher:** I’ve just found it really interesting. I think, if we (reference to Harry Close Primary Academy) were to do it again, I mean, it was really beneficial for me to have that time out (of the classroom when the MT was delivering Paws .b), but at the same time, I’d like to have taken a more active role if we did (Paws .b) again. Taking a more active approach would be good, because it’s all well and good talking to them (reference to participants) afterwards and them being all, “Yeah, it was great!”

**Researcher:** So more involved in the delivery of Paws .b?

**Second waitlist control teacher:** Yeah. And if they (reference to the participants) see me joining in, they might think, “Oh, [second waitlist control teacher] is doing it so it might me
“alright.” Because it’s not often that kids see (their) teachers getting fully involved. It would be interesting to see.

**Researcher:** Anything else that you would like to feed back about your experience of Paws b?

**Second waitlist control teacher:** I just think they were genuinely interested by it.

**Researcher:** Brilliant. Well thank you very much. I’ll stop recording now.
Appendix 33 – Interview codes with data extracts: Experimental teacher and waitlist control teachers

Pupils enjoyed Paws .b

- **Experimental teacher**: The children seemed to really enjoy it (reference to Paws .b).

- **Experimental teacher**: I didn’t see any of the sessions, but they (reference to pupils) seemed to really enjoy it.

- **Second waitlist control teacher**: A lot of them (reference to the pupils) enjoy it (reference to Paws .b).

Pupils were excited by Paws .b

- **Experimental teacher**: They (reference to the pupils) were excited about it whenever they knew that that (Paws .b) lesson was going to happen. They seemed to be able to talk about it afterwards and they wanted to discuss it. So it seemed to work quite well for them.

- **Second waitlist control teacher**: They (reference to the pupils) talk about it a lot.

**First waitlist control teacher**: That’s good.

**Second waitlist control teacher**: Yeah. Which is nice. “Oh, is [researcher] in today?”

- **Second waitlist control teacher**: And yeah, they did talk about it a lot.
Pupils were curious of/ interested in Paws .b

- **Second waitlist control teacher:** I think it (reference to Paws .b) tapped into their curiosity as well, and that’s a really good thing. I actually think they thought, “This is different.” Not necessarily, “I can use it,” but, “What is it?” Because they are naturally intrigued, as kids, by anything new.

- **Researcher:** Anything else that you would like to feed back about your experience of Paws .b?

  **Second waitlist control teacher:** I just think they were genuinely interested by it.

Pupils wanted Paws .b to continue

- **Experimental teacher:** [T]he children really would like to continue on with it (reference to Paws .b).

- **Experimental teacher:** I have overheard before they would have mindfulness, especially when there was talk of that being the last (Paws .b) lesson, they (reference to the pupils) were like, “Oww. We really liked mindfulness.” Yeah, I think they really would like it (reference to Paws .b) to continue.

No behaviour concerns during Paws .b

- **Experimental teacher:** Mrs. Beale (intervention teacher) said some of the children who can be silly were well-behaved during the lessons – they got really stuck into it.
Paws .b as a skill for pupils to use independently

- **Experimental teacher:** And I think, if they can see that adults do that type of thing (reference to mindfulness) and it’s (reference to Paws .b) something that they could practise with people at home.

- **Experimental teacher:** Because, really, it’s (reference to mindfulness) is a skill that you continuously learn. And if it’s something that the children learn really early on you learnt ways to deal with things, because a lot of children maybe don’t have somebody at home who understands why their kid is getting upset about pressures in school.

- **Experimental teacher:** I think it (reference to Paws .b) would be a life skill.

Most pupils used mindfulness practices outside of Paws .b lessons

- **Second waitlist control teacher:** A lot of them seem to be putting their mindfulness approaches into practice – I’ve seen quite a few sat there like this (demonstrates putting their hands on their lap, their feet flat on the floor and closing their eyes).

  **Researcher:** Interesting.

  **Second waitlist control teacher:** Moh22 asked if she could practise mindfulness and I said, “Yes”. Which was nice.

  **First waitlist control teacher:** That’s nice…
- **First waitlist control teacher:** I’m just wondering, obviously because I don’t see the children that much… Do they bring it (reference to Paws .b mindfulness practices) into class a lot then? Do they use it in the afternoons, say, or does anyone ask, “Can I do mindfulness now?”

**Second waitlist control teacher:** Erm, on the odd occasion. More thoughtful children, like Moh22 would. And I would suggest, “Oh, take five minutes.” If Moh22 wants to put it (reference to Paws .b mindfulness practices) into practice, she can.

**First waitlist control teacher:** Yeah.

**Second waitlist control teacher:** I think, as time progresses, they might ask more (reference to the fact that Paws .b had ended).

**Paws .b hypothesised to be helpful for pupils to manage anxiety**

- **Experimental teacher:** And you look in your class at children like Nis11 who has anxiety issues about going to the bathroom and literally was not going all day long he was so scared. And you’ve got children like Beg19 who obviously have anxiety issues and choose not to speak in school. If from an earlier age they had had an understanding of why they feel certain ways (reference to receiving Paws .b), they could deal with anxiety in a different way.

**Researcher:** Yeah. So you feel that Paws .b would be helpful for children with anxieties?

**Experimental teacher:** Because at Primary School you have a lot of children who already have those signs of anxiety issues and stress and, yeah, some kids become really, really stressed.
- **First waitlist control teacher:** It would be interesting if we were going to introduce this (reference to Paws .b) next year because all children worry about coming into Year-4 because they have to swim. That’s a really big thing for them. And lots of them fret at the end of Year-3 and that’s what they really worry about. That’s what parents worry about. So it would be interesting if this was introduced either at the end of Year-3 or the beginning of Year-4 as that coping strategy.

  **Second waitlist control teacher:** Yeah.

**Paws .b helped improve certain pupils’ behaviours**

- **Researcher:** Brilliant. So, the next question is: In what ways do you think that Paws .b helped your pupils?

  **Experimental teacher:** You can see that some of the children have changed in their behaviour and some of the more troublesome children have become a little bit less stroppy.

**Paws .b helped pupils become more focused**

- **Second waitlist control teacher:** Well, a lot of them (reference to the pupils) seem more focussed.

**Paws .b was calming for certain pupils**

- **Experimental teacher:** I think for some of the children it possibly has helped them to be more calm maybe; not act in such an aggressive way. Maybe being a little bit more
like, “This is me – I don’t really feel that I need to act like somebody who’s two to deal with situations.”

**Paws .b didn’t cause any problems for pupils**

- **Researcher:** Yeah. Brilliant. So, the next question is: Do you feel like Paws .b caused any problems for your pupils?

  **Experimental teacher:** I don’t think it caused them any problems, no. I can’t think of anything that would have caused them any problems… nope.

- **Researcher:** Do you think Paws .b caused any problems for your pupils?

  **Second waitlist control teacher:** I don’t think so. No. I didn’t notice anything as a result of it (reference to Paws .b).

- **Researcher:** So we’ve already touched onto Paws .b not causing any problems for your pupils or you as the class teacher?

  **Second waitlist control teacher:** No, no actual problems

**Not all pupils used mindfulness practices outside of Paws .b lessons**

- **Second waitlist control teacher:** A lot of them (reference to the pupils)…wouldn’t necessarily venture into doing it (reference to Paws .b mindfulness practices) unless they were prompted.
Paws .b is suitable to be taught across Key Stage 1 and 2

- **Experimental teacher:** And, yeah, I think it (reference to Paws .b) could be taught across Key Stage 1 and 2.

**Researcher:** Like a spiral curriculum?

**Experimental teacher:** Yeah. I mean, obviously, you wouldn’t be telling Year-1 about the brain, but it’s suitable for Year-4, so as you go up the older school years, it would possibly really help them. So yeah, I think it would be beneficial for all.

- **First waitlist control teacher:** Yeah definitely. And that (reference to Paws .b) could carry on throughout Key Stage 2 then because there are SATs, because kids in Year-6 know that they’ve got to go to high school and they’ve got to do SATs.

**Second waitlist control teacher:** That’s what I thought.

Pupils liked that Paws .b was un-reliant on ‘intelligence’

- **Experimental teacher:** It’s not a case of, “If you’re really intelligent, you’ll be really good at this.” Or that there is no good or being good at it (reference to Paws .b). The kids probably really liked that part of it as well.

- **Experimental teacher:** [I]t’s that sort of idea, “Oh, I’m dumb. I’m stupid. I can’t do this.” And they’re (reference to the pupils) all well able to do the tasks that they’re given because it’s pitched at their level. You know, I’m not asking them to do beyond what Year-4 would be expected to do. Yet they still have this kind of attitude. But, they all seemed to have really had a good go at doing the mindfulness and there seemed to be no issues. So, I wonder: Is it because they realised that… I think Mrs.
Beale (intervention teacher) made it very clear for them that, “There is no right or wrong in this. It’s just about you and having a go.” So yeah, I suppose it (reference to Paws .b) builds their confidence in something else.

Pupils saw Paws .b as different to typical lessons

- **Experimental teacher:** I suppose, as well, it’s (reference to Paws .b) a lesson where they don’t see it as a lesson. It’s not lots of literacy. So it’s a time (reference to pupils) for them to learn about them. They’re not learning something that we’re going to test. It’s just about learning about you and doing things for you.

- **Researcher:** Yeah. So Paws .b was seen as different?

  **Second waitlist control teacher:** Yeah.

Class teachers didn’t feel that 6-weeks was long enough to see the full impact of Paws .b

- **Experimental teacher:** [I]f you do something for six weeks, how much can you change as a person? Whereas, if you’d done it (reference to Paws .b) for a whole year, it could potentially have so much more benefit. Really, really sort of embed that different way of thinking.

  **Researcher:** So do you feel that Paws .b was a little ‘whistle stop’?

  **Experimental teacher:** Yeah, a little bit. Obviously, I wasn’t in any of it (reference to Paws .b), but I think that for it to have a real effect, it would need to be over a year. It would have to be done every week for a prolonged period of time.
- **Experimental teacher:** It’s very hard in 6-weeks to show that there would be any change. Like, I’ve had them (reference to the experimental group) since September (2013), and I’m, only now, seeing changes in their personalities and changes in the ways that they’re working. But that was in September (2013), so we’re talking half a year, really, it’s taken them to get used to the way I teach and things like that.

- **Experimental teacher:** But I think for it (reference to Paws .b) to be beneficial it needs to be over a long period of time

**Paws .b could be improved by it being more embedded within school**

- **Experimental teacher:** [Y]ou can have an after school club where you can be teaching others and reinforcing what they’ve learned. It would have been nice to do something outside of it (reference to Paws .b) for them (reference to pupils) to get opportunities to use it (reference to mindfulness) in different settings. It will help them.

**Researcher:** So Paws .b could have been improved by it being more embedded within school?

**Experimental teacher:** Yeah. Just so that they could have some sort of purpose to it. So they would see that there’s a reason that people do this (reference to Paws .b). I think to get the best out of it (Paws .b), it really would need to be more embedded or it would really give the children an opportunity to see if they wanted to embed it. Yeah.

- **Experimental teacher:** Erm, it’s a nice idea that Paws .b would become part of school life. If a school had the right attitude to it (reference to Paws .b), it wouldn’t be a case of, “Oh, can we fit it in the curriculum this week?” It could be another lesson that would be seen as a valued lesson.
Experimental teacher: If the school was to do it (reference to delivering Paws .b again), it would need to be a whole-school approach and it would need to be a continuous programme for it to be of benefit.

Example of Paws .b helping a pupil overcome their fear of swimming

Experimental teacher: You know, there were simple little things like Nis11 was really scared by going swimming. Nis11 became very anxious all the time, but they are now in the water and Nis11 is doing alright. Nis11 is a lot more confident.

Example of Paws .b helping a pupil overcome their fear of the toilet

Experimental teacher: Also, Nis11 had anxieties about going to the toilet – just that it was a scary place whenever they went, so Nis11 wanted somebody to go with them and now it’s okay for that person to stand outside and not go into the toilet with Nis11. So Nis11 is a little bit braver. So I don’t know if that’s because Nis11 feels a little bit more confident.

Example of Paws .b helping a pupil engage more in lessons

Experimental teacher: And then Moh15, who just always seemed to be away in another world during lessons. You would ask Moh15 a question and they were never really able to respond with an answer. Even within small group work with the Primary Leaning Mentors, they found the same thing – Moh15 would never be listening, they weren’t getting involved in any of the lessons. That was in literacy and numeracy – it was in everything. There was nothing that seemed to interest Moh15 like they were in
another world. And since Christmas (reference to the beginning of Paws .b for the experimental group), Moh15 is listening all the time; Moh15 is really involved in all of the lessons; Moh15 had made loads of progress in numeracy; Moh15 has made some progress in literacy.

Example of Paws .b helping a pupil express their anger differently

- **Experimental teacher:** Ikr04, like I say, they used to be a child who became very angry very easily. Especially in the last week or two (reference to the final two weeks of Paws .b), instead of becoming angry he just cries now. I’m not sure whether you’d consider that to be something positive or not, but at least he’s showing his emotions possibly in a more honest way, rather than just becoming angry and not being willing to speak to somebody. Ikr04 is still angry but he’s showing it in a different way.

Example of Paws .b helping a pupil become more open to experience

- **Experimental teacher:** And like Rac20 is a lot more positive. They’re a lot more willing to try things. Rac20 is still a little bit stroppy and still acts a little bit immature, but Rac20 has improved.

Example of Paws .b helping a pupil become less reserved

- **First waitlist control teacher:** It’s very interesting that Moh22 is doing it (reference to Paws .b mindfulness practices), because Moh22 is very self-critical and Moh22 is a very nervous child. So that obviously is a coping mechanism for Moh22, which is really good.

  **Second waitlist control teacher:** I think that’s nice for her actually.
First waitlist control teacher: Because at the beginning of the year, Moh22 didn’t speak at all – they were really shy and quite reserved.

Second waitlist control teacher: Moh22 was saying to Mrs. Beale (the intervention teacher), “How can I practise it (reference to Paws .b mindfulness practices) at home? If I don’t want to get out of bed, can I do it when I’m laying down still in bed?” And she (reference to Mrs. Beale) was just like, “Yeah. Yeah. Yeah. Just change it.” So they (reference to Moh22) were actively taking an interest, which was nice.

Example of Paws .b helping a pupil manage their emotions

- First waitlist control teacher: I think Tan20 as well, it’s (reference to Paws .b) taught them to recognise feelings, because particularly with swimming, Tan20 was very frightened. But one (swimming) session, Tan20 said to me, “I know I’m frightened, but I’m going to have a try and it’s okay to be frightened.” And I was like, “Yeh. Great. Go for it!”

Researcher: Was that a recent development in Tan20?

First waitlist control teacher: Yeah, it was whenever this (reference to Paws .b started).

Second waitlist control teacher: Yeah, she’s (reference to Tan20) starting to, which is nice.

First waitlist control teacher: Especially when Tan20 got in at the deep end.

Class teachers were unsure that positive pupil impact was solely due to Paws .b
- **Experimental teacher:** But then it’s hard to know if it’s (reference to pupils’ behavioural improvements) to do with other factors or whether it’s to do with mindfulness (reference to Paws .b).

- **Experimental teacher:** Nis11 is a lot more confident (with reference to swimming). But is that just because we’ve been going swimming for longer and would that have happened anyway (i.e., regardless of Paws .b)? I suppose it’s really hard to tell.

- **Experimental teacher:** I don’t know… that, again, I don’t know if there was something at home that’s now changed, but Moh15 is definitely a very different child now. It’s great.

- **Experimental teacher:** Ikr04 is still angry but he’s showing it in a different way. But when I spoke to one of the teaching assistants who works with Ikr04’s brother’s class, they said that the same thing happened with Ikr04’s brother, so I can’t tell if this is something different in both of them, or maybe Ikr04 changed (how they responded to anger) which made their younger brother change (how they responded to anger). You don’t know if it’s a knock-on effect (of Paws .b) in that way.

- **Experimental teacher:** But again, you don’t know, “Is that (reference to Rac20’s increased openness to experience) to do with other things?” The fact that Rac20 really is growing up or what.

**Easier for class teachers to see the impact of Paws .b on pupils who experience difficulty**

- **Experimental teacher:** But I suppose it (reference to Paws .b) possibly has helped those children who are just nice, pleasant children. The nice girls who are just like, “Ohh – that was a really nice activity. I really like to have a little bit of time to think”.
For them children as well, it’s harder to see an effect on those children who were always ‘good’ and who are always working and hard and who always do the right thing, because if you’re always doing the right thing, it’s very hard to show… well, “What are you going to show me?” You’re already a good student. You already try. It’s hard to measure how that (reference to Paws .b) affects them without thinking about them and their personalities. It has possibly changed their ways of thinking about things and made them much calmer, but it’s difficult to tell with those children.

- **Researcher:** So am I right in hearing that Paws .b has had more impact upon pupils who have been experiencing difficulty in school?

**Second waitlist control teacher:** Yeah. From the kids that [the first waitlist control teacher] has told me about as well, yeah. Yeah, mainly I’d say.

**First waitlist control teacher:** I’d agree with that, yeah.

**Researcher:** So for pupils who haven’t been experiencing difficulty in school, how did they respond to Paws .b?

**Second waitlist control teacher:** They just took it in their stride.

**First waitlist control teacher:** Yeah, with everything else.

**Second waitlist control teacher:** Yeah.

**It would be ideal for Paws .b intervention teachers to also be class teachers**

- **Experimental teacher:** I think it’s unfortunate though – the fact that it’s (reference to Paws .b) not with the class teacher because you can’t reinforce it during lessons.
Experimental teacher: But not being the (intervention) teacher who’s taught them the Paws .b, you can’t reinforce it and that affects then how effective it can be because you can’t say, “Oh, why don’t we try out this…?” So it was kind of like, they (reference to the pupils) would do it on a Monday for an hour, and then there was no talk about it for a whole week till the following Monday, and I think it would maybe be more beneficial if it was reinforced continuously.

Researcher: Okay. So, next question: In what ways do you feel that the Paws .b mindfulness programme has helped your teaching?

Experimental teacher: I think it’s hard for it (reference to Paws .b) to have an impact on my teaching because, apart from the information that you provided at the beginning of the research, I don’t have any other information about it, so I don’t really know how it would impact on my teaching without me teaching it.

Researcher: Yeah. I understand.

Experimental teacher: I could see how it would have a lot of positive effects on your teaching.

Experimental teacher: But I think it (reference to teaching Paws .b) would be a good opportunity to use it. Like, I don’t think that you would have to have a specific mindfulness lesson where you said, “This is our mindfulness lesson.” But I think it could help…possibly you could use some of those (Paws .b mindfulness) strategies throughout your lessons without having a separate, “This is mindfulness.” I think it’s something that you could teach a little bit (of) all the time. So if we were talking about something that was to do with your emotional side and how you feel, you could then apply it (reference to Paws .b) then.

Experimental teacher: And with the swimming, when we (reference to the experimental group) started going swimming, I noticed that they (reference to the
pupils) started saying that they felt really sick. And in those situations it would be really helpful to use Paws .b and explore why they are feeling that way and what makes them feel like that and how we can manage difficult feelings. It (reference to Paws .b) would be part of your teacher toolkit.

- **Experimental teacher:** I really do think that you would need it to be the class teacher (who delivers Paws .b) for it to have an effect.

- **Researcher:** I hear what you’re saying: That some of the utility of the Paws .b lessons, in terms of reinforcing the lessons throughout the week, was lost because you weren’t the intervention teacher.

  **Experimental teacher:** Yeah, which is quite unfortunate.

- **Second waitlist control teacher:** I’ve just found it really interesting. I think, if we (reference to Harry Close Primary Academy) were to do it again, I mean, it was really beneficial for me to have that time out (of the classroom when the intervention teacher was delivering Paws .b), but at the same time, I’d like to have taken a more active role if we did (Paws .b) again. Taking a more active approach would be good, because it’s all well and good talking to them (reference to pupils) afterwards and them being all, “Yeah, it was great!”

  **Researcher:** So more involved in the delivery of Paws .b?

  **Second waitlist control teacher:** Yeah.

**There is an optimal way to timetable Paws .b**
- **Experimental teacher:** In a way, it’s (reference to Paws .b) a timetabling issue. Year-4 is a very difficult year. It took up, basically, one afternoon because Mrs. Beale (the intervention teacher) came at 14.00 to 15.00, which means you can’t do anything for half-an-hour before or half-an-hour after. So although it didn’t affect me in any way – it was nice to have the spare time when Mrs. Beale had my class, it did mean that I was stuck because we don’t have a lot of afternoons free.

**Researcher:** Right. So timetabling could have been more rigorous?

**Experimental teacher:** Yeah.

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**Paws .b is something that the school should do again**

- **Researcher:** Yeah. And I suppose you’ve answered my next question really, but do you think that Paws .b is something that the school should do again?

**Experimental teacher:** Yeah I think so.

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- **Researcher:** So from your experience of Paws .b, is it something that the school should do again?

**First waitlist control teacher:** Definitely.

**Second waitlist control teacher:** I think so.

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**Paws .b didn’t cause any problems for class teachers**
- **Researcher:** Okay. Did Paws .b cause any problems for you as a teacher?

**Experimental teacher:** I don’t really think so.

- **Researcher:** And did Paws .b cause any problems for you as class teachers, because [first waitlist control teacher], you did the baseline and Time-1 assessments, whereas you [second waitlist control teacher] will be doing the Time-2 and Time-3 assessments, so the data collection ‘burden’ was half and half?

**First waitlist control teacher:** I didn’t find it particularly difficult.

**Second waitlist control teacher:** No.

- **Researcher:** And then for you as well – no problems for you as a teacher as a result of Paws .b?

**Second waitlist control teacher:** No. No.

**Paws .b evoked interest in class teachers**

- **Second waitlist control teacher:** But I’m now thinking that I’m going to go to the mindfulness drop-in sessions (for adults) because I’m really interested to know what it would be like from an adult perspective.

**Researcher:** So has Paws .b intrigued you?

**Second waitlist control teacher:** Yeah. Yeah. It really has. Because I wanted to do it (reference to mindfulness) before but I couldn’t, and I’d really like to do some (mindfulness) myself with the kids, I mean, they know more than I do at the moment, you know.
Appendix 34 – Interview transcript: Mindfulness teacher (Time-2)

Researcher: So you’ve said that you’re happy for me to record our interview.

Mindfulness teacher: Yes.

Researcher: And you’re happy that when I transcribe the interview, I will do so anonymously and you will be referred to as ‘mindfulness teacher’.

Mindfulness teacher: Yes.

Researcher: Okay. So, first question: How do you think Paws .b went?

Mindfulness teacher: Overwhelmingly positive. I think I was really staggered to see how quickly, considering that it’s just a 6-hour intervention, how quickly, as the weeks progressed, the change, not only in the children’s understanding about mindfulness as a concept, the mechanics of how their brain works and stuff, so that basic skills and knowledge level – they retained that really, really well. But also the depth, the increased depth in which we were able to take the (Paws .b mindfulness) practices to, I think that was a lot more… I hadn’t really thought beforehand how there would actually be a tangible difference that I would see as the (mindfulness) teacher, you know, literally looking at my watch and going, “Oh wow – that was 6-minutes (of a Paws .b mindfulness practice).” You know, we were starting off (the Paws .b mindfulness practices) doing 1-minute, 2-minutes… so…

Researcher: Yeah. I suppose it’s good to see a variety of improvements, because you said there was an increase in pupils’ Paws .b curriculum knowledge, as well as an increase in the depth of their mindfulness practices, because that, as an adult mindfulness practitioner, is something that only comes with practice. Because when you start practicing mindfulness as an adult, you struggle to do 3- or 4-minutes at the beginning, don’t you?

Mindfulness teacher: Yeah.
**Researcher:** But, like you said, the increased depth of pupils’ mindfulness practices was definitely something that I observed during my fidelity checks, particularly as I came in to observe each group every other Paws.b lesson.

**Mindfulness teacher:** Yeah, you saw the last Paws.b lesson with the first class (reference to the experimental group), didn’t you?

**Researcher:** Yeh.

**Mindfulness teacher:** And the first lesson with the new class (reference to the WCG)?

**Researcher:** Yeah.

**Mindfulness teacher:** Because I remember, because I was so disheartened, it so starkly shows the difference that had happened for that first group of learners (reference to the intervention cross-lag).

**Researcher:** But I totally agree with you. I think the depth to which you were able to take the Paws.b mindfulness practices with the pupils was something that I was particularly impressed by. For example, during the final fidelity check in the WCG, I remember writing down that there was a palpable, noticeable difference between how the pupils were at the beginning of the lesson and how they were after the first mindfulness practice.

**Mindfulness teacher:** That stillness…

**Researcher:** The stillness and the calm, and the depth of reflection on the mindfulness practice afterwards. Some pupils at the beginning of the lesson were just not engaging at all, but after the practice they were actually offering their reflections.

**Mindfulness teacher:** Yeah. The ability that the children showed to do that ‘noticing’… I think it was both that we were able to create the climate in the classroom where they realised, “Actually, this is a safe space – this is a safe thing to share.” Because I was always very careful to… even if I used the lollipop method to select pupils, if they then said, “No, I don’t want to say anything,” that was allowed – in Paws.b, you could opt out. But actually, I found
that got less – more and more children were actually desperate (to share what they had noticed) and I quite often had to extend… in my mind where I thought, “I’ll take 3-minutes now – I’ll take two kids’ answers about their noticing,” there would be children and, granted, not all of them, but a key group who would be bursting because they wanted to share that experience that they had had, which wasn’t there in their first weeks (of Paws .b). You know, there was that, “I kind of don’t really know what you’re asking me – what do you mean by, ‘What did I notice?’”

Researcher: I think you’re right – it did build over time. At the beginning of Paws .b, pupils did ask a lot of questions because they saw Paws .b as totally different to how they are used to lessons being. Yet at the end of Paws .b, you used the word ‘experience’ – Paws .b was more of an experience to pupils and it was something that they were keen to share their reflections about, and they did eventually see Paws .b as totally different to typical lessons.

Mindfulness teacher: And I think the children realising that, because I was able to keep reinforcing it in my language, “There’s no right or wrong, and some days when I do my mindfulness practice, some days it’s just really hard and I might actually choose to stop early, because I think, ‘I’m just not in the zone,’ or, ‘I’m just not getting it today.’ I’ve obviously got things I need to stop – go and do that job – write that down so I can put it to one side and then come back to it.” And being able to really explain that to the children so that when they put their hand up and say, “I was really distracted today by noises outside the window,” but for them to realise that that is still something to celebrate that they were less focused and that they found it hard to keep their attention on their breathing. They were aware that their mind was going to those noises. They were aware that that was what was distracting them – what an amazing level of noticing that that child was doing after 5-hours (of Paws .b).

Researcher: Yeah.

Mindfulness teacher: With both classes (reference to the experimental group and the WCG), I could count on one hand the number of kids who, by (Paws .b) lesson five or six, were still not getting into the mindfulness practice fully, and I think that’s a development for the future would be, “How do you differentiate a Paws .b mindfulness lesson?” Or, “How do you differentiate a (Paws .b mindfulness) practice delivery?”
**Researcher:** Yeah.

**Mindfulness teacher:** And for me, it was that massive proximity. I tried in one of the first lessons, especially doing the FOFBOC, to actually sit (with the pupils) and model, so, “Look, you need to sit like I am,” but I needed that teacher tool of walking around the room and being able to stand between two pupils who were eyeballing each other, and just use my presence, which didn’t allow me to settle into any of the (Paws .b mindfulness) practices.

**Researcher:** That’s really good to know in terms of Paws .b possible being adapted, or Paws .b possibly being rolled out to other primary school within the trust, it’s really useful to know that whilst there is the logical argument within the mindfulness community that, “Mindfulness teachers need to be established mindfulness practitioners themselves,” when you’re delivering Paws .b in a context such as Harry Close (Primary Academy), it may be unrealistic for mindfulness teachers to be able to engage in (Paws .b) mindfulness practices with their pupils because of behaviour management needs.

**Mindfulness teacher:** You have to be adaptive. Things like, if I hear a noise, even though I’m not fully in the (Paws .b mindfulness) practice, I’m there through the children and, you know, someone walks down the corridor, knowing at that opportunity I need to say something about, “As we hear voices and if our mind wanders off, try to not allow it (reference to pupils’ attention) to wander off…,” and get into that mindfulness speech of, “Back onto your breathing. Back onto your body. Back into being, not thinking.”

**Researcher:** Yeah.

**Mindfulness teacher:** And the other big, big thing which I remember [Chief Operating Officer of NDET and Lead on Mindfulness] saying to me from the start, and I kind of appreciated at the time, but appreciate a whole lot more now, is, it’s that post (Paws .b mindfulness) practice discussion that is so key and I think that if you hadn’t had a real range of mindfulness experiences yourself, and if you weren’t a regular mindfulness practitioner, you know. What do you do with a kid who gives some garbled response and you think, “How on earth have you got that?” Or knowing what to say if a child says, “I’m bored – it was boring!” Having the confidence to take that and turn it into, “Ohh, that’s interesting. Think about those body sensations. What did you notice in your body when you said that you felt
‘bored’?” And being able to give that reassurance, so, “That’s okay – that’s happened to me.” And it’s been really, really powerful – the kids are fascinated that you as a grown-up are sharing this quite private thing, because quite a lot of it would be maybe seen as admitting a weakness and, “Ohh, that happened to me – I heard when the bell went.” And I think if you weren’t a mindfulness practitioner yourself, you’d lose all that richness and it (reference to pupil feedback) would end up being – you’d have a stock phrase of, “Thanks for sharing. Good noticing. You’ve noticed that – well done.” And we don’t want it to be too much of a, “Good answer… Bad answer.”

**Researcher:** I guess the depth of mindfulness experience that you are able to draw on will only add to pupils’ depth of mindfulness experience when you are having those feedback discussions and conversations.

**Mindfulness teacher:** And they (reference to the participants) found that hard. In the last (Paws .b) lesson we were looking at happiness and trying to get them to, “Ooh, what does happiness actually feel like? Is happiness a thought? Is happiness a feeling? What sensations do you have in your body when you’re happy?” And that’s still a real challenge to them. That, sort of, metacognition and, “What’s a thought.” It’s hard. It’s BA (Bachelor of Arts) Philosophy kind of territory in some respects.

**Researcher:** Yeah.

**Mindfulness teacher:** But I also really liked, and I think it was helpful that I practice mindfulness myself. If a child was able to share something and say, “Oh, I tried doing it (reference to a Paws .b mindfulness practice) at home but this happened,” and for me to then say, “Oh right – that happened to me. Did anyone else?” And the fact that other children are putting their hands up and going, “Yes actually.” The lesson we do, ‘Dealing With Difficulties’, ‘having a wobble’, “Can you think of a time – can you remember a time when you felt nervous?” And they (reference to the participants) are all able to remember a time. And for those that can remember and notice effectively and say, “Oh, yeh, my hands get very hot and sweaty,” it’s using that to then give a bit of scaffolding to others, so they might not have thought of something themselves, but when they hear somebody else share it, “Ohh, yes, same – I do get that.” And I think being a mindfulness practitioner as the (mindfulness) teacher delivering it (reference to Paws .b), if you’ve not got that in the room, which you
don’t have in those first three or four (Paws .b) lessons, you’re unlikely, from my experience anyway, to have any of the children be able to talk in that depth, it has to come back on you to give from your experience.

**Researcher:** Yeah. Right. I’ve not forgotten that you mentioned about differentiating Paws .b, but some of the questions more towards the end are about whether you feel there are any improvements that can be made to Paws .b, so I’ll come back to you on that.

**Mindfulness teacher:** Of course.

**Researcher:** So, the next question is: In what ways do you feel that Paws .b has helped your pupils?

**Mindfulness teacher:** Okay. I think it (reference to Paws .b) gave them something totally new and unique that, as far as I’m aware, we (reference to teachers) don’t provide in school; they don’t get out of school. They may get some sort of a connection on a spiritual level perhaps if they attend a church or a mosque.

**Researcher:** Yeah.

**Mindfulness teacher:** And I think we gave them the tools… I love the analogy of the snow globe. Using that as the metaphor – I think that was really powerful with the kids. I think that’s what we’ve been able to give our pupils: A way of recognising not only what might be going on in their bodies in terms of feelings and bodily sensations linked to strong emotions of sadness or worry, and joy as well, but we’ve given them the images with the weeble-wobble and the snow globe to think, “Ahh, actually, yes, I’m feeling nervous now or I’m wobbling – what can I do?” And actually, some practical strategies.

**Researcher:** Yeah.

**Mindfulness teacher:** And just a form of relaxation. I feel like we’ve given them (reference to Paws .b participants) a relaxation tool. Something to do just for them in those quiet moments. Thinking just from an education point of view, it’s relentless. We don’t allow our children to be still. It’s all about engagement; stimulation; learning; progress, and that’s good
and that has its place. And I think in the home it’s similar. It’s all about stimulating and experiences and opportunities, and they sit in front of screens, and a lot of our children live in big families and busy households. A lot of them, they don’t have their own bedroom; physically, they’re never isolated – they never have that quiet. So I think we’ve given them, through the Paws .b curriculum, a way of finding a bit of space – finding peace in a frantic world, but at their level. We might, as adults, say that they (reference to Paws .b participants) don’t have the stress that we have. But I think, to them, they really do, and they feel that pressure, but at an age-appropriate level.

Researcher: It’s really interesting to think that Paws .b has given the pupils that language to add to their introspective abilities.

Mindfulness teacher: That’s well put, I totally agree with that. They’ve now got a language to articulate what’s going on inside their body and mind.

Researcher: And it’s nice to think that Paws .b has provided pupils with the tools necessary to find space and relax within what may be quite busy young lives.

Mindfulness teacher: And I really made sure that I emphasised that in the last (Paws .b) lesson, making sure there was a proper 5-minutes at the end to wrap it up really and say, “From me coming in and teaching you (Paws .b), that’s the end and I’m not coming back. But, this is just the beginning – you’ve got all the tools you need. It’s now down to you to use it as and when you want, and when you need to. This is it – you’ve got the skills.” Almost action-planning with them, Saying, “We’ve done these practices – which one works best for you? Which one do you find easiest? Where is good for you? When is good for you – what time of day?” All that stuff.

Researcher: Yeah.

Mindfulness teacher: I don’t know how practical it would be to, like we do in the adult mindfulness courses, to get them (reference to the Paws .b participants) to write it (reference to a mindfulness action-plan) and I put it in an envelope and I give it back to them a few months later. That very simple thing, you know, questions: “Where do I like to do mindfulness? When is a good time? What practice do I like? What would I like to try? I’m
going to try…” Just like we do in the adult mindfulness course – it’s that gentle reminder when, “This is new and exciting,” has worn off a bit.

**Researcher:** I think that’s a fair comment about how the Paws .b curriculum could be changed or developed. You’ve already made the comment about how to differentiate Paws .b and also what action planning could be done with the pupils at the end of Paws .b.

**Mindfulness teacher:** Yeah.

**Researcher:** Can you think of any specific examples of how Paws .b has helped your pupils?

**Mindfulness teacher:** Definitely. For example, there was a pupil in the second class (reference to the WCG) who, again, very low cognitive ability, and I think struggled to connect with what I was saying and talking it through, who said that it was, “I don’t do it – it’s boring – I’ve not done my home practice.” Actually, to then be a bit a more firm with them and put my teacher hat on and say, “I know you may not find this easy, but could you try this over the next week?” And they actually came back and said, “Yeah, I did do it – I felt calm.” And I was like, “Whey! Let’s celebrate this!”

**Researcher:** Yeah.

**Mindfulness teacher:** There are lots of pupils that I can think of in those first couple of weeks; doing the first (Paws .b mindfulness) practices, there’d be a lot of half opening eyes – trying to catch their friends’ eyes, sort of nervous giggling – it’s that sort of, “What’s going on? Miss just chimed this bell thing. It’s weird. The lights are turned off. She’s talking slowly. People have got their eyes shut. This is weird.” And you can almost see the moment at which they caught it – they noticed their breathing for the first time, and that sort of stillness and fascination that comes with, “Oh wow. Yes. I’m sensing all these things. I breathe all the time but I’ve never really stopped to experience my breathing.” And I think with both classes (reference to the experimental group and the WCG), each lesson you could see a few more kids who had caught it (reference to ‘catching’ the experience of mindfulness) – it’s not something you teach, it’s something you catch. And if you can give a child the experience, and help him to kind of catch it – be in the moment, once they’ve done it once, it’s great. And there were a lot of children in the first few (Paws .b) lessons who
would reluctantly go through the motions of getting ready, but not really be in the (Paws .b mindfulness) practice. But then, at a certain point, you would notice that the (Paws .b PowerPoint) slide would come up and they would see what (Paws .b mindfulness) practice they were going to do, and they would just seamlessly moved into it and shut their eyes and waited as if they were like, “Yes!”.

**Researcher:** Yeah.

**Mindfulness teacher:** And, almost, they’d probably already started and taken their attention to their breath still whilst I was faffing around moving some of the children who would look at each other and making sure that they’re isolated. Sort of minimising the disruptions where possible. That, actually, others had started and they were there, which is an enormous change.

**Researcher:** Yeah.

**Mindfulness teacher:** For some of them (reference to the participants), that (reference to “catching” the experience of mindfulness) happened in week one or week two. For others, it didn’t happen until week four.

**Researcher:** I love that term “catching” mindfulness. And that you’ve had specific examples of children with low cognitive ability “catching” mindfulness eventually, even though initially they didn’t engage with, or found it difficult to engage with, the experience of mindfulness. But that Paws .b did facilitate them being able to ‘catch’ mindfulness eventually, as well as other pupils more generally. Is that what I heard?

**Mindfulness teacher:** Yeah. Reflecting back, seeing how my stress levels diminished as the teaching (of Paws .b) went on, it became more of a joy to walk in, having already done my (mindfulness) practice before walking in, because I think it’s so important to come in in that mode of stillness – that idea that if you’re very still and focussed on what you’re doing, and me just walking in in that demeanour and being able to say, “Okay, get your desks cleared, start putting your stuff away. In a minute I’ll start the countdown and we’ll see who’s ready.” The kids got on and did that and there was more, “Yes! Mindfulness!” That children were actively saying, “Ohh – when are you coming next week?” And just that excitement of wanting to do it.
Researcher: Yeah.

Mindfulness teacher: And the fact that as the weeks went on, I was aware, whilst doing the practice, rather than it being quite a few pockets (of disengagement) throughout the room, by the end it would be say five key pupils that I needed to keep my eye on almost and, “Are they okay? Are they doing it (reference to Paws .b mindfulness practices)? At least if they’re not doing it, are they distracting others?” Because what started off as a small minority (of pupils) that were totally in the zone, grew and grew and grew. So that shift, between the kids that were really in the (Paws .b mindfulness) practice and not, flipped.

Researcher: So did you think that 6-weeks of Paws .b was enough time for a critical mass of pupils to ‘catch’ the experience of mindfulness?

Mindfulness teacher: Yeah. I always thought beforehand, “Corr, 6-weeks… that’s not…” And when we did the (Paws .b) training, “6-hours – that’s really not… for something like this… that’s not a lot at all.” But I think, because we increased the number of (Paws .b mindfulness) practices that they (reference to the participants) were doing, I think that really helped.

Researcher: Yeah.

Mindfulness teacher: And I certainly feel now, if you’d asked me at the end of teaching the second class (reference to the WCG) and the first class (reference to the experimental group), the children who weren’t engaging (with Paws .b), giving them another 6-weeks (of Paws .b), they still wouldn’t have engaged – they need something different.

Researcher: And that comes back to the differentiation point…

Mindfulness teacher: Something needs to change. It’s no good just, “Corr, I’ll keep doing it – they’ll eventually get it…” No. There’s obviously a barrier there which need unpicking.

Researcher: Yeah yeah yeah.
Mindfulness teacher: So I would say 6-weeks, surprisingly for me, I think actually has given them (reference to the participants) what they need.

Researcher: Yeah.

Mindfulness teacher: I think it would be lovely, obviously, to have the person delivering it (reference to Paws .b) being that class teacher, that you can just then carry on and do daily (Paws .b mindfulness) practices with the class, as and when. You know, first thing in the morning; first thing after lunch; before you go home, just doing one of those (Paws .b mindfulness) practices to get that stillness and settling would be amazing.

Researcher: Yes. So more responsive use of Paws .b mindfulness practices?

Mindfulness teacher: Yeah.

Researcher: I think that’s quite a natural progression and it would be nice to think that that could happen.

Mindfulness teacher: Yeah.

Researcher: But I think herein lies a barrier (with reference to the IT’s suggestion that it would be ideal for pupils’ class teachers to deliver Paws .b), because you mentioned that so much of the depth of pupils’ experience of Paws .b rests upon your experience as a mindfulness practitioner, you can’t get away from that training need in that class teachers would need to be established mindfulness practitioners like yourself before you could look at getting them trained to deliver Paws .b to their pupils with the classroom.

Mindfulness teacher: Yeah. You can’t get away from it.

Researcher: And it seems, from what you’ve said, that if mindfulness teachers weren’t established mindfulness practitioners, Paws .b would have as much of an impact upon pupils?
**Mindfulness teacher:** Yeah. And I think another thing is how do we adopt mindfulness practices as a whole school within the wider school day? And I’m very keen to have mindful moments in assemblies. That’s a perfect time when pupils are all together.

**Researcher:** And I can see that class teachers being mindfulness teachers, and mindfulness within the whole school, seem like natural progressions of Paws .b.

**Mindfulness teacher:** And I think a mindful club, group, for pupils. I know we’ve got a staff one (reference to a mindfulness group) starting up.

**Researcher:** Yeah.

**Mindfulness teacher:** But I’d like to think that quite a lot of the pupils from the two classes (reference to the experimental group and the WCG)… and thinking back to that first class (reference to the experimental group) now – we had it (reference to Paws .b) and it was great, but we took it away, all in one go. Like that. Gone. Dead. Get on with it yourself. Which, ethically, is quite harsh. It’s cut off.

**Researcher:** Yeah.

**Mindfulness teacher:** So I think a really good development at the school level would be to find one of our staff members who is a mindfulness practitioner willing to do drop-ins. You know, either lunchtimes or breaktimes, and set aside a room where the children know that they can go during their break or their lunch. It wouldn’t necessarily be every day, but there would be certain days they could go and find that bit of quiet and that bit of calm, which I think would be fantastic opportunity for them to develop, and to have the support of their peers, and an adult would obviously be there to any issues or any noticing that they wanted to share. But also that level of maturity because you’d be saying, “Come when you want to. Come when you need to.” And you might get some pupils saying, “Actually, I’m feeling good at the moment. I have no difficulties. I’m not going to go.” But at other points, feeling stressed and feeling anxious about things, knowing that the can go and seek that out as a bit of self-regulated self-help.
Researcher: Definitely. So, next question: How do you feel that the Paws .b mindfulness supported your teaching?

Mindfulness teacher: Can I take that as, ‘How has Paws .b supported me in my role as my role in school’ (reference to the IT not having a teaching commitment within school, except having delivered Paws .b to both the experimental group and the WCG)?

Researcher: Sure.

Mindfulness teacher: I think, being the lead on behaviour, I see a lot of kids for great rewards and praise, and I think children very much identify house points and stuff with me. But also having the sanctions side of it as well. I think it (reference to Paws .b) has just allowed the children to get to see another side of me. I feel like those classes knew of me in school. I’d not directly taught any of them previously. They’ve seen me in assemblies. They’ve seen me in and around. They know who I am. But this (reference to Paws .b) has given me an opportunity to share myself with them (reference to the participants) at quite a deep, personal level actually, which I think has brought about a lot of mutual respect between myself and the pupils.

Researcher: Yeah.

Mindfulness teacher: And I would like to say, in terms of the (mindfulness) teacher delivery, low-level disruptions weren’t ruled out and there were, as there always will be, certain kids calling out who are wanting to have that slightly cheeky, inappropriate dialogue with you across the class, and, obviously, as a teacher I would use my teacher strategies to shut that down and stuff.

Researcher: Yeah.

Mindfulness teacher: But I think there was a real closeness developed, and now as the second half of the term has gone on and I’ve seen the pupils from that first class (reference to the experimental group) around school, I think there’s definitely a connection. I couldn’t say what it is or anything. It could be partly, it’s that connection brought about by the fact that I’ve been in an taught them (Paws .b), and had I been going in and teaching them music,
there still might have been that bit of a connection. But I do think that because the nature of the experiences we shared were different, they were unnatural.

**Researcher:** Yeah.

**Mindfulness teacher:** And we made a point of saying that to the kids, that the rules are different for (Paws .b) mindfulness. It’s not a normal lesson. We’re not going to be asking you to behave in a normal way.

**Researcher:** Yeah.

**Mindfulness teacher:** I think that’s (reference to Paws .b) very much changed the way the pupils see me.

**Researcher:** Yeah.

**Mindfulness teacher:** And I’ve had some experiences where kids have almost… not been disrespectful, but not maybe talked to me in a way that most of the other children would. So, sort of be aware that… children almost being over-familiar compared to other pupils who would have that bit of distance because they understand. Obviously very friendly – I’m very friendly with them, I don’t want children to be distant from me, but I’ve had a few passing comments with kids who have been a bit bold and over-familiar. And I think with some of them I have kind of said… I’ve contained that and maybe had a little word about, “Oh that’s great but now’s not the time – now’s not the time to ask that.”

**Researcher:** Yeah.

**Mindfulness teacher:** But from a mindfulness practitioner point of view, I’m really pleased that that has happened and they (reference to the participants) feel that they’ve got that connection with me and that closeness and things are okay to share.

**Researcher:** I think that’s a valid critique, because you said how necessary it was and how enjoyable it was to have the closeness with the pupils from a mindfulness practitioner point of view, but that the closeness which developed between you and the pupils perhaps didn’t
transfer well to your role as Assistant Vice Principal on the Senior Leadership Team with responsibility for behaviour management in school.

**Mindfulness teacher:** Yeah, there was a bit of a mismatch of roles. I don’t think it was an issue, but trying to think about how it (reference to Paws .b) has changed or influence my role, my relationship with pupils, my standing in the school. Because I guess you’d say, if you were employing somebody externally as a mindfulness practitioner, you’d probably say, call you by your first name. I would advocate, “This is David. David is going to be your mindfulness teacher. It’s a different role within school.” And I think that that’s what has been reflected in those few pupils who have maybe been a bit forward with me.

**Researcher:** Yeah.

**Mindfulness teacher:** But I wish I had it (reference to the closeness Paws .b engenders between the mindfulness teacher and pupils) when I was a Year-4 classroom teacher, because it can take quite a long time to develop that (closeness) with your class. And I think it’s always a shock to teach, especially when you’re new to teaching, you come back in September and it’s really cold. You feel very distant from your kids and that relationship is very cold and I suppose all we (reference to the teaching profession) have ever had before is time for them to get to know you and have shared experiences. But I think mindfulness as an additional tool that you could add into the (school) curriculum, perhaps, would be an amazing way of, within that first 6-weeks (of term), creating that relationship, not just between the teacher and pupils, but between the pupils themselves in the class. Because it does demand a high level of confidentiality and respect, and that safety you talk about creating. You talk about creating that safe space for pupils to be able to shut their eyes and know that that is okay and that no one is going to do anything silly to them. And a safe space to share personal, intimate thoughts and worries and things. We ask them to expose themselves in lessons about ‘Talking About Difficulties’ and stuff. That could be very powerful.

**Researcher:** Yeah. Did Paws .b cause any problems for the pupils that you taught?

**Mindfulness teacher:** I don’t think so. It worries me to say that. “Has there been something that I’ve missed?” There were no children who came back and approached me and said, “I did that, but it was really hard.” There were no children came back and said, “I was doing my
home practice and I really didn’t like it.” The only problems I would say, in that, children not engaging, but no more so than a warning from me and, “You need to do a ‘think sheet’ and reflect on your behaviour. Come back to my office with me and we’re going to have a private chat.” But those children behaving in that way during the Paws .b deliver would behave like that in R. E. and in Maths – that’s par for the course and I don’t think that was specifically linked to the Paws .b at all.

Researcher: And then did Paws .b cause any problems for you as the mindfulness teacher?

Mindfulness teacher: Only on days when [the other safeguarding officer] was out and there was a safeguarding concern, but that’s not to be avoided. That would be the only issue I would say was that very basic needing to be in two places at once. I can’t think that there were any times that I had to cancel a Paws .b lesson all together. So no, not apart from that.

Researcher: We’re coming towards the end now – the last 10-minutes or so. Is there anything else that you would like to feed back about your experience of the Paws .b programme that we’ve not already covered?

Mindfulness teacher: Small groups would be amazing. I think for all those children, in an ideal world, having taught those first four (Paws .b) lessons, you can get an idea as the (mindfulness) teacher in room who’s still never really experienced that being – never really connected with their body, to somehow facilitate… whether you could do it at the same time with another mindfulness practitioner would be amazing, but they just needed it done on a one-to-one basis or in a small group. So, you’d have three children sat there and you’d be modelling it (reference to Paws .b mindfulness practices) for them and talking it through with them and being able to use your hand on their body parts and saying, “We’re focusing on our feet now,” and even touching their feet, and, “Can you feel the sensation of my hands on your feet?” Giving them a bit more sensory input. You can’t do that when you’re teaching in that big group.

Researcher: Yeah.

Mindfulness teacher: Your words and delivery have got to maintain everyone’s (Paws .b mindfulness) practice and as soon as you start talking quietly to a person like this, its
distracting for everyone. So I kind of felt like I was ploughing on regardless of their needs for the good of the majority.

**Researcher:** Yeah.

**Mindfulness teacher:** But had we had the opportunity to do small group-focussed mindfulness, it would have been amazing. The normal stuff (reference to differentiation) is applicable to mindfulness and whoever was delivering it (reference to Paws .b) and say we only had me again, if we were able to timetable in for those fourth, fifth, sixth weeks an additional half-hour slot – maybe a few additional 15-minute slots in the week, where they could take those children out and do a very small delivery, we’re not talking about them not doing the main class (reference to a Paws .b lesson), but during that small class, you’ve almost done a bit of pre-teaching – you’ve done a pre-teaching booster intervention to set them up.

**Researcher:** Good idea.

**Mindfulness teacher:** And having done the pre-teaching (of a Paws .b lesson), I think that would be so much more productive in supporting them in their practice rather than all I felt I was doing was trying to minimise the fact that they weren’t doing it (reference to Paws .b mindfulness practices), “Well, I feel awful, but I’m not able to help you in that now, so all I’m trying to do now is make sure that you’re not disrupting the other children who are doing it by putting you facing away or walking around and standing by you a lot.” That would be a big change that I would like to see in terms of the delivery of the (Paws .b) curriculum across school is the planning in the pre-teach groups and the support groups.

**Researcher:** That’s very interesting with regards to future developments that you would like to make. So, last question: Do you think that Paws .b is something that the school should do again?

**Mindfulness teacher:** Yes. Definitely. The children really enjoyed it. There was a palpable buzz when I walked into the room, and I don’t think that was because of me walking in – it was the nature of what I was there to do. They (reference to the participants) appreciated that this (reference to Paws .b) was a bit different – this (reference to Paws .b) was a chance
where they (reference to participants) got to relax a bit. It wasn’t going to be the same old, “Right, we’ve got an objective, and we’re going to achieve it by the end of this lesson. You’ve got to have something in your books to evidence that you’ve done it.” The hamster-wheel of attainment and progress that we expect of them (reference to the participants), that they knew this (reference to Paws .b) was a time where, yeah, there was quite a lot of discussion and things, and they got a bit of space; a bit of quiet during the day and in school, which is so unnatural.

Researcher: Yeah.

Mindfulness teacher: So I would definitely, definitely do it (reference to Paws .b) again and would like to see it rolled out more widely across the school – that would be our plan. To see, “Have we got the staff? Can we deliver it to the new Year-4s coming up? What do we do in Year-5 for these current Year-4 classes who have had it – are we able to offer them something? Would we then try give something to the current Year-5s at the end of this (academic) year, pre Year-6 and pre SATs and stuff, so that they can go into Year-6 having these skills?” But I think the work would also need to be done with those Year-6 teachers, some of whom have not done the (adult) mindfulness (training) themselves so that they can understand how to make good use of it (reference to Paws .b), not just before a test, but, you know, Year-6 is a stressful year – the kids feel the pressure of being the top of the school.

Researcher: Absolutely. Well thank you for your time. I’m going to stop recording now.
Appendix 35 – Interview codes with data extracts: Mindfulness teacher (Time-2)

Pupils enjoyed Paws .b

- **Mindfulness teacher:** The children really enjoyed it. There was a palpable *buzz* when I walked into the room, and I don’t think that was because of me walking in – it was the nature of what I was there to do.

Pupils became increasingly excited about Paws .b

- **Mindfulness teacher:** [As the teaching (of Paws .b) went on…, there was more, “Yes! Mindfulness!” That children were actively saying, “Ohh – when are you coming next week?” And just that excitement of wanting to do it.

Paws .b became a joy for the IT to deliver

- **Mindfulness teacher:** Reflecting back, seeing how my stress levels diminished as the teaching (of Paws .b) went on, it became more of a joy.

Paws .b did not cause problems for pupils

- **Researcher:** Did Paws .b cause any problems for the pupils that you taught?

  **Mindfulness teacher:** I don’t think so. It worries me to say that. “Has there been something that I’ve missed?” The only problems I would say, in that, children not engaging, but no more so than a warning from me and, “You need to do a ‘think sheet’ and reflect on your behaviour. Come back to my office with me and we’re going to have a private chat.” But those children behaving in that way during the
Paws .b deliver would behave like that in R. E. and in Maths – that’s par for the course and I don’t think that was specifically linked to the Paws .b at all.

**Paws .b did not cause problems for the IT**

- **Researcher:** [D]id Paws .b cause any problems for you as the mindfulness teacher?

  **Mindfulness teacher:** Only on days when [the other safeguarding officer] was out and there was a safeguarding concern, but that’s not to be avoided. That would be the only issue I would say was that very basic needing to be in two places at once. I can’t think that there were any times that I had to cancel a Paws .b lesson all together. So no, not apart from that.

**Paws .b was totally new for pupils**

- **Mindfulness teacher:** I think it (reference to Paws .b) gave them something totally new and unique that, as far as I’m aware, we (reference to teachers) don’t provide in school; they don’t get out of school.

- **Mindfulness teacher:** And we made a point of saying that to the kids, that the rules are different for (Paws .b) mindfulness. It’s not a normal lesson. We’re not going to be asking you to behave in a normal way.

- **Mindfulness teacher:** [T]he nature of the experiences we (reference to the IT and the pupils) shared were different, they were unnatural.
- **Mindfulness teacher:** They (reference to the pupils) appreciated that this (reference to Paws .b) was a bit different.

**Paws .b developed pupils’ mindfulness skills for future use**

- **Mindfulness teacher:** And I really made sure that I emphasised that in the last (Paws .b) lesson, making sure there was a proper 5-minutes at the end to wrap it up really and say, “From me coming in and teaching you (Paws .b), that’s the end and I’m not coming back. But, this is just the beginning – you’ve got all the tools you need. It’s now down to you to use it as and when you want, and when you need to. This is it – you’ve got the skills.” Almost action-planning with them, Saying, “We’ve done these practices – which one works best for you? Which one do you find easiest? Where is good for you? When is good for you – what time of day?” All that stuff.

**Pupils found Paws .b to be calming/ relaxing**

- **Researcher:** [D]uring the final fidelity check in the WCG, I remember writing down that there was a palpable, noticeable difference between how the pupils were at the beginning of the lesson and how they were after the first mindfulness practice.

  **Mindfulness teacher:** That stillness…

- **IT:** And just a form of relaxation. I feel like we’ve given them (reference to pupils) a relaxation tool. Something to do just for them in those quiet moments.

- **Mindfulness teacher:** [T]his (reference to Paws .b) was a chance where they (reference to the pupils) got to relax a bit.
Pupils quickly engaged with the Paws .b curriculum content

- **Mindfulness teacher:** I was really staggered to see how quickly, considering that it’s just a 6-hour intervention, how quickly, as the weeks progressed… the change, not only in the children’s understanding about mindfulness as a concept, (but) the mechanics of how their brain works and stuff, so that basic skills and knowledge level – they retained that really, really well.

Paws .b enabled pupils to **catch** the experience of mindfulness

- **Mindfulness teacher:** There are lots of pupils that I can think of in those first couple of weeks; doing the first (Paws .b mindfulness) practices, there’d be a lot of half opening eyes – trying to catch their friends’ eyes, sort of nervous giggling – it’s that sort of, “What’s going on? Miss just chimed this bell thing. It’s weird. The lights are turned off. She’s talking slowly. People have got their eyes shut. This is weird.” And you can almost see the moment at which they **caught** it – they noticed their breathing for the first time, and that sort of stillness and fascination that comes with, “Oh wow. Yes. I’m sensing all these things. I breathe all the time but I’ve never really stopped to experience my breathing.”

- **Mindfulness teacher:** And if you can give a child the experience, and help them to kind of **catch** it – be in the moment, once they’ve done it once, it’s great.

Pupils **caught** the experience of mindfulness at different times throughout Paws .b

- **Mindfulness teacher:** I think with both classes (reference to the experimental group and the WCG), each lesson you could see a few more kids who had **caught** it
(reference to ‘catching’ the experience of mindfulness) – it’s not something you teach, it’s something you catch.

- **Mindfulness teacher:** [T]here were a lot of children in the first few lessons who would reluctantly go through the motions of getting ready, but not really **be** in the (Paws .b mindfulness) practice.

- **Mindfulness teacher:** For some of them (reference to the pupils), that (reference to ‘catching’ the experience of mindfulness) happened in week one or week two. For others, it didn’t happen until week four.

- **Mindfulness teacher:** And the fact that as the weeks went on, I was aware, whilst doing the practice, rather than it being quite a few pockets (of disengagement) throughout the room, by the end it would be say five key pupils that I needed to keep my eye on almost and, “Are they okay? Are they doing it (reference to Paws .b mindfulness practices)? At least if they’re not doing it, are they distracting others?” Because what started off as a small minority (of pupils) that were totally in the zone, grew and grew and grew. So that shift, between the kids that were really in the (Paws .b mindfulness) practice and not, flipped.

**Paws .b lasted long enough for a critical mass of pupils to catch the experience of mindfulness**

- **Mindfulness teacher:** With both classes (reference to the experimental group and the WCG), I could count on one hand the number of kids who, by (Paws .b) lesson five or six, were still not getting into the mindfulness practice fully.
Researcher: So did you think that 6-weeks of Paws .b was enough time for a critical mass of pupils to ‘catch’ the experience of mindfulness?

Mindfulness teacher: Yeah. I always thought beforehand, “Corr, 6-weeks… that’s not…” And when we did the (Paws .b) training, “6-hours – that’s really not… for something like this… that’s not a lot at all.” But I think, because we increased the number of (Paws .b mindfulness) practices that they (reference to the pupils) were doing, I think that really helped.

Researcher: Yeah.

Mindfulness teacher: And I certainly feel now, if you’d asked me at the end of teaching the second class (reference to the WCG) and the first class (reference to the experimental group), the children who weren’t engaging (with Paws .b), giving them another 6-weeks (of Paws .b), they still wouldn’t have engaged – they need something different.

Mindfulness teacher: So I would say 6-weeks, surprisingly for me, I think actually has given them (reference to the pupils) what they need.

Once pupils had caught the experience of mindfulness, they engaged more readily Paws .b mindfulness practices

Mindfulness teacher: [At a certain point, you would notice that the (Paws .b PowerPoint) slide would come up and they would see what (Paws .b mindfulness) practice they were going to do, and they would just seamlessly moved into it and shut their eyes and waited as if they were like, “Yes!”].

Researcher: Yeah.

Mindfulness teacher: And, almost, they’d probably already started and taken their
attention to their breath still whilst I was faffing around moving some of the children who would look at each other and making sure that they’re isolated. Sort of minimising the disruptions where possible. That, actually, others had started and they were there, which is an enormous change.

- **Mindfulness teacher:** I hadn’t really thought beforehand how there would actually be a tangible difference that I would see as the (mindfulness) teacher, you know, literally looking at my watch and going, “Oh wow – that was 6-minutes (of a Paws .b mindfulness practice).” You know, we were starting off (the Paws .b mindfulness practices) doing 1-minute, 2-minutes… so…

**The impact of Paws .b was noticeable at the intervention cross-over**

- **Mindfulness teacher:** Yeah, you saw the last Paws .b lesson with the first class (reference to the experimental group), didn’t you?

  **Researcher:** Yeh.

  **Mindfulness teacher:** And the first lesson with the new class (reference to the WCG)?

  **Researcher:** Yeah.

  **IT:** Because I remember, because I was so disheartened, it so starkly shows the difference that had happened for that first group of learners (reference to the intervention cross-lag).

**Paws .b enabled the IT to create a safe space for pupils to undertake mindfulness practices**
- **Mindfulness teacher**: [W]e were able to create the climate in the classroom where they realised, “Actually, this is a safe space – this is a safe thing to share.” Because I was always very careful to… even if I used the lollipop method to select pupils, if they then said, “No, I don’t want to say anything,” that was allowed – in Paws .b, you could opt out.

- **Mindfulness teacher**: [C]reating that safe space for pupils to be able to shut their eyes and know that that is okay and that no one is going to do anything silly to them. And a safe space to share personal, intimate thoughts and worries and things. We ask them to expose themselves in lessons.

**Throughout Paws .b, pupils were increasingly willing to share their experiences**

- **Mindfulness teacher**: [M]ore and more children were actually desperate (to share what they had noticed). [T]here would be…a key group who would be bursting because they wanted to share that experience that they had had, which wasn’t there in their first weeks (of Paws .b).

- **Mindfulness teacher**: The lesson we do, ‘Dealing With Difficulties’, ‘having a wobble’, “Can you think of a time – can you remember a time when you felt nervous?” And they (reference to the pupils) are all able to remember a time. And for those that can remember and notice effectively and say, “Oh, yeh, my hands get very hot and sweaty.” (But), if you’ve not got that in the room, which you don’t have in those first three or four (Paws .b) lessons, you’re unlikely, from my experience anyway, to have any of the children be able to talk in that depth.

**The IT’s delivery of Paws .b was enhanced by their personal mindfulness practice**
- **Mindfulness teacher:** [I]t’s that post (Paws .b mindfulness) practice discussion that is so key and I think that if you hadn’t had a real range of mindfulness experiences yourself, and if you weren’t a regular mindfulness practitioner, you know. What do you do… if a child says, “I’m bored – it was boring!” Having the confidence to take that and turn it into, “Ohh, that’s interesting. Think about those body sensations. What did you notice in your body when you said that you felt ‘bored’?” And being able to give that reassurance, so, “That’s okay – that’s happened to me.”

- **Mindfulness teacher:** I think if you weren’t a mindfulness practitioner yourself, you’d lose all that richness and it (reference to pupil feedback) would end up being – you’d have a stock phrase of, “Thanks for sharing. Good noticing. You’ve noticed that – well done.” And we don’t want it to be too much of a, “Good answer… Bad answer.”

- **Mindfulness teacher:** I think it was helpful that I practice mindfulness myself. If a child was able to share something and say, “Oh, I tried doing it (reference to a Paws .b mindfulness practice) at home but this happened,” and for me to then say, “Oh right – that happened to me. Did anyone else?” And the fact that other children are putting their hands up and going, “Yes actually.”

**Paws .b improved pupils’ ability to notice mind wanderings**

- **Mindfulness teacher:** Yeah. The ability that the children showed to do that ‘noticing’.

- **Mindfulness teacher:** And being able to really explain that to the children so that when they put their hand up and say, “I was really distracted today by noises outside the window,” but for them to realise that that is still something to celebrate that they...
were less focused and that they found it hard to keep their attention on their breathing. They were aware that their mind was going to those noises. They were aware that that was what was distracting them – what an amazing level of noticing that that child was doing after 5-hours (of Paws .b).

**Paws .b challenged pupils’ metacognitive skills**

- **Mindfulness teacher:** And they (reference to the pupils) found that hard. In the last (Paws .b) lesson we were looking at happiness and trying to get them to, “Ooh, what does happiness actually feel like? Is happiness a thought? Is happiness a feeling? What sensations do you have in your body when you’re happy?” And that’s still a real challenge to them. That, sort of, metacognition and, “What’s a thought.” It’s hard. It’s BA (Bachelor of Arts) Philosophy kind of territory in some respects.

**The Paws .b curriculum contained useful analogies/ metaphors for identifying bodily sensations linked to emotions**

- **Mindfulness teacher:** I love the analogy of the snow globe. Using that as the metaphor – I think that was really powerful with the kids. I think that’s what we’ve been able to give our pupils: A way of recognising not only what might be going on in their bodies in terms of feelings and bodily sensations linked to strong emotions of sadness or worry, and joy as well, but we’ve given them the images with the weeble-wobble and the snow globe to think, “Ahh, actually, yes, I’m feeling nervous now or I’m wobbling – what can I do?”

- **Mindfulness teacher:** They’ve now got a language to articulate what’s going on inside their body and mind.
Paws .b militates against stressors at school and at home

- Mindfulness teacher: Thinking just from an education point of view, it’s relentless. We don’t allow our children to be still. It’s all about engagement; stimulation; learning; progress, and that’s good and that has its place. And I think in the home it’s similar. It’s all about stimulating and experiences and opportunities, and they sit in front of screens, and a lot of our children live in big families and busy households. A lot of them, they don’t have their own bedroom; physically, they’re never isolated – they never have that quiet. So I think we’ve given them, through the Paws .b curriculum, a way of finding a bit of space – finding peace in a frantic world, but at their level. We might, as adults, say that they (reference to the pupils) don’t have the stress that we have. But I think, to them, they really do, and they feel that pressure, but at an age-appropriate level.

- Mindfulness teacher: The hamster-wheel of attainment and progress that we expect of them (reference to the pupils), that they knew this (reference to Paws .b) was a time where, yeah, there was quite a lot of discussion and things, and they got a bit of space; a bit of quiet during the day and in school, which is so unnatural.

Paws .b allows pupils to see a different side to the IT through teacher-pupil sharing

- Mindfulness teacher: [I]t’s been really, really powerful – the kids are fascinated that you as a grown-up are sharing this quite private thing, because quite a lot of it would be maybe seen as admitting a weakness and, “Ohh, that happened to me – I heard when the bell went.”

- Mindfulness teacher: I think, being the lead on behaviour, I see a lot of kids for great rewards and praise, and I think children very much identify house points and stuff
with me. But also having the sanctions side of it as well. I think it (reference to Paws .b) has just allowed the children to get to see another side of me.

- **Mindfulness teacher:** I think that’s (reference to Paws .b) very much changed the way the pupils see me.

**Paws .b led to greater mutual respect between pupils and the IT**

- **Mindfulness teacher:** But this (reference to Paws .b) has given me an opportunity to share myself with them (reference to the pupils) at quite a deep, personal level actually, which I think has brought about a lot of mutual respect between myself and the pupils.

**Paws .b led to a connection between pupils and the IT**

- **Mindfulness teacher:** But I think there was a real closeness developed, and now as the second half of the term has gone on and I’ve seen the pupils from that first class (reference to the experimental group) around school, I think there’s definitely a connection. I couldn’t say what it is or anything.

- **Mindfulness teacher:** I’m really pleased that…they (reference to the pupils) feel that they’ve got that connection with me and that closeness and things are okay to share.

**Example of Paws .b helping a pupil of low cognitive ability to connect to their internal experiences**
- **Researcher:** Can you think of any specific examples of how Paws .b has helped your pupils?

**Mindfulness teacher:** Definitely. For example, there was a pupil in the second class (reference to the WCG) who, again, very low cognitive ability, and I think struggled to connect with what I was saying and talking it through, who said that it was, “I don’t do it – it’s boring – I’ve not done my home practice.” Actually, to then be a bit a more firm with them and put my teacher hat on and say, “I know you may not find this easy, but could you try this over the next week?” And they actually came back and said, “Yeah, I did do it – I felt calm.” And I was like, “Whey! Let’s celebrate this!”

**Paws .b inspired the IT to embed mindfulness within the whole school**

- **Mindfulness teacher:** I think another thing is how do we adopt mindfulness practices as a whole school within the wider school day? And I’m very keen to have mindful moments in assemblies. That’s a perfect time when pupils are all together.

- **Mindfulness teacher:** I think a mindful club, group, for pupils. I know we’ve got a staff one (reference to a mindfulness group) starting up.

- **Mindfulness teacher:** So I think a really good development at the school level would be to find one of our staff members who is a mindfulness practitioner willing to do drop-ins. You know, either lunchtimes or breaktimes, and set aside a room where the children know that they can go during their break or their lunch. It wouldn’t necessarily be every day, but there would be certain days they could go and find that bit of quiet and that bit of calm, which I think would be fantastic opportunity for them to develop, and to have the support of their peers, and an adult would obviously be there to any issues or any noticing that they wanted to share.
Mindfulness teacher: I…would like to see it rolled out more widely across the school – that would be our plan. To see, “Have we got the staff? Can we deliver it to the new Year-4s coming up? What do we do in Year-5 for these current Year-4 classes who have had it – are we able to offer them something? Would we then try give something to the current Year-5s at the end of this (academic) year, pre Year-6 and pre SATs and stuff, so that they can go into Year-6 having these skills?”

Paws .b would quickly build closeness between class teachers and their pupils, and between pupils

Mindfulness teacher: I think it’s always a shock to teach, especially when you’re new to teaching, you come back in September and it’s really cold. You feel very distant from your kids and that relationship is very cold and I suppose all we (reference to the teaching profession) have ever had before is time for them to get to know you and have shared experiences. But I think mindfulness as an additional tool that you could add into the (school) curriculum, perhaps, would be an amazing way of, within that first 6-weeks (of term), creating that relationship, not just between the teacher and pupils, but between the pupils themselves in the class.

Paws .b as something that the school should do again

Researcher: Do you think that Paws .b is something that the school should do again?

Mindfulness teacher: Yes. Definitely.

Mindfulness teacher: I would definitely, definitely do it (reference to Paws .b) again.
Behaviour management needs prevented the IT from engaging fully in Paws .b mindfulness practices

- **Mindfulness teacher:** I tried in one of the first lessons, especially doing the FOFBOC, to actually sit (with the pupils) and model, so, “Look, you need to sit like I am,” but I needed that teacher tool of walking around the room and being able to stand between two pupils who were eyeballing each other, and just use my presence, which didn’t allow me to settle into any of the (Paws .b mindfulness) practices.

- **Mindfulness teacher:** And I would like to say, in terms of the (mindfulness) teacher delivery, low-level disruptions weren’t ruled out and there were, as there always will be, certain kids calling out who are wanting to have that slightly cheeky, inappropriate dialogue with you across the class.

It would be beneficial to differentiate the Paws .b curriculum

- **Mindfulness teacher:** I think that’s a development for the future would be, “How do you differentiate a Paws .b mindfulness lesson?”

It would be beneficial to differentiate Paws .b mindfulness practices

- **Mindfulness teacher:** I think that’s a development for the future would be…. “How do you differentiate a (Paws .b mindfulness) practice delivery?”

Differentiating Paws .b mindfulness practices within the whole class distracted more ‘able’ pupils
- Mindfulness teacher: Your words and delivery have got to maintain everyone’s (Paws .b mindfulness) practice and as soon as you start talking quietly to a person like this, it’s distracting for everyone. So I kind of felt like I was ploughing on regardless of their needs for the good of the majority.

Good differentiation could consist of delivering Paws .b in small groups

- Mindfulness teacher: Small groups would be amazing. I think for all those children, in an ideal world, having taught those first four (Paws .b) lessons, you can get an idea as the (mindfulness) teacher in room who’s still never really experienced that being – never really connected with their body, to somehow facilitate… whether you could do it at the same time with another mindfulness practitioner would be amazing, but they just needed it done on a one-to-one basis or in a small group.

- Mindfulness teacher: Had we had the opportunity to do small group-focussed mindfulness, it would have been amazing.

Good differentiation could consist of pre-teaching Paws .b to less ‘able’ pupils

- Mindfulness teacher: If we were able to timetable in for those fourth, fifth, sixth weeks an additional half-hour slot – maybe a few additional 15-minute slots in the week, where they could take those children out and do a very small delivery, we’re not talking about them not doing the main class (reference to a Paws .b lesson), but during that small class, you’ve almost done a bit of pre-teaching – you’ve done a pre-teaching booster intervention to set them up.

Researcher: Good idea.

Mindfulness teacher: And having done the pre-teaching (of a Paws .b lesson), I think
that would be so much more productive in supporting them in their practice rather than all I felt I was doing was trying to minimise the fact that they weren’t doing it (reference to Paws .b mindfulness practices).

**Paws .b could be improved by more formally action planning pupils’ future use of mindfulness**

- **Mindfulness teacher:** I don’t know how practical it would be to, like we do in the adult mindfulness courses, to get them (reference to the pupils) to write it (reference to a mindfulness action-plan) and I put it in an envelope and I give it back to them a few months later. That very simple thing, you know, questions: “Where do I like to do mindfulness? When is a good time? What practice do I like? What would I like to try? I’m going to try…” Just like we do in the adult mindfulness course – it’s that gentle reminder when, “This is new and exciting,” has worn off a bit.

**It would be beneficial for pupils’ class teachers to deliver Paws .b**

- **Mindfulness teacher:** I think it would be lovely, obviously, to have the person delivering it (reference to Paws .b) being that class teacher, that you can just then carry on and do daily (Paws .b mindfulness) practices with the class, as and when. You know, first thing in the morning; first thing after lunch; before you go home, just doing one of those (Paws .b mindfulness) practices to get that stillness and settling would be amazing.

**Researcher:** Yes. So more responsive use of Paws .b mindfulness practices?

**Mindfulness teacher:** Yeah.
The Paws .b requirement that ITs be mindfulness practitioners creates a training need

- **Researcher:** But I think herein lies a barrier (with reference to the IT’s suggestion that it would be ideal for pupils’ class teachers to deliver Paws .b), because you mentioned that so much of the depth of pupils’ experience of Paws .b rests upon your experience as a mindfulness practitioner, you can’t get away from that training need in that class teachers would need to be established mindfulness practitioners like yourself before you could look at getting them trained to deliver Paws .b to their pupils with the classroom.

**Mindfulness teacher:** Yeah. You can’t get away from it.

**Researcher:** And it seems, from what you’ve said, that if mindfulness teachers weren’t established mindfulness practitioners, Paws .b would have as much of an impact upon pupils?

**Mindfulness teacher:** Yeah.

A disadvantage of Paws .b, as a discrete intervention, is that it comes and goes

- **Mindfulness teacher:** We had it (reference to Paws .b) and it was great, but we took it away, all in one go. Like that. Gone. Dead. Get on with it yourself. Which, ethically, is quite harsh. It’s cut off.

Paws .b led to some pupils becoming over-familiar with the IT

- **Mindfulness teacher:** And I’ve had some experiences where kids have almost… not been disrespectful, but not maybe talked to me in a way that most of the other children would. So, sort of be aware that… children almost being over-familiar compared to other pupils who would have that bit of distance because they
understand. Obviously very friendly – I’m very friendly with them, I don’t want children to be distant from me, but I’ve had a few passing comments with kids who have been a bit bold and over-familiar. And I think with some of them I have kind of said… I’ve contained that and maybe had a little word about, “Oh that’s great but now’s not the time – now’s not the time to ask that.”

Pupil over-familiarity, as a result of Paws .b, is challenging for senior staff

- Researcher: I think that’s a valid critique, because you said how necessary it was and how enjoyable it was to have the closeness with the pupils from a mindfulness practitioner point of view, but that the closeness which developed between you and the pupils perhaps didn’t transfer well to your role as Assistant Vice Principal on the Senior Leadership Team with responsibility for behaviour management in school.

Mindfulness teacher: Yeah, there was a bit of a mismatch of roles. I don’t think it was an issue, but trying to think about how it (reference to Paws .b) has changed or influence my role, my relationship with pupils, my standing in the school.

Researcher: Yeah.
### Appendix 36– Themes, sub-themes, codes and data sources

<table>
<thead>
<tr>
<th>Research question</th>
<th>Themes</th>
<th>Sub-themes</th>
<th>Code</th>
<th>Data source</th>
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<tr>
<td>What aspects of the Paws .b mindfulness programme were perceived to be beneficial by the experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher?</td>
<td>The Paws .b mindfulness programme was positively evaluated</td>
<td>Most pupils positively evaluated the Paws .b</td>
<td>Pupils enjoyed Paws .b</td>
<td>Pupil focus groups</td>
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<td>Pupils were instilled with a pioneering sense of pride having received Paws .b</td>
<td>Pupil focus groups</td>
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<td>Pupils enjoyed the Paws .b curriculum content and format</td>
<td>Pupil focus groups</td>
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<td>Pupils enjoyed learning about the human brain throughout Paws .b</td>
<td>Pupil focus groups</td>
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<td>Pupils enjoyed the funny videos throughout Paws .b</td>
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<td>Pupils enjoyed sharing their feelings with each other throughout Paws .b</td>
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<td>Pupils embraced the Paws .b mindfulness practices</td>
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<td>Pupils felt that Paws .b mindfulness practices allowed them to go to a ‘better place’</td>
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<td>Pupils used Paws .b mindfulness practices beyond the classroom</td>
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<td>Class teachers felt that their pupils positively evaluated the Paws .b</td>
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<td>Pupils enjoyed Paws .b</td>
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<td>Pupils were excited by Paws .b</td>
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<td>Pupils were curious of/ interested in Paws .b</td>
<td>Teacher interviews</td>
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<td>Pupils wanted Paws .b to continue</td>
<td>Teacher interviews</td>
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<td>Pupils liked that Paws .b was un-reliant on ‘intelligence’</td>
<td>Teacher interviews</td>
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<td>Pupils saw Paws .b as different to typical lessons</td>
<td>Teacher interviews</td>
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<td>Paws .b didn’t cause any problems for pupils</td>
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<td>Class teachers positively evaluated the Paws .b</td>
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<td>Paws .b evoked interest in class teachers</td>
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<td>Paws .b didn’t cause any problems for class teachers</td>
<td>Teacher interviews</td>
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<td>The Paws .b mindfulness programme facilitated pupil gains</td>
<td>Paws .b suitable to be taught across Key Stage 1 and 2</td>
<td>Teacher interviews</td>
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<td>Paws .b as something the school should do again</td>
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<td>Teacher interviews</td>
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<td>Pupils reported cognitive and emotional gains</td>
<td>Pupils found Paws .b to be helpful for reducing distractibility/ improving concentration</td>
<td>Pupil focus groups</td>
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<td>Pupils found Paws .b to be helpful for monitoring and reducing mind wanderings</td>
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<td>Pupils found Paws .b to be helpful for reducing forgetfulness</td>
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<td>Pupils found Paws .b to be helpful for noticing/ managing somatic sensations</td>
<td>Pupil focus groups</td>
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<td>Pupils found Paws .b to be relaxing</td>
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<td>Pupils found Paws .b to be helpful for self-regulation</td>
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<td>Pupils found Paws .b to be helpful for managing difficult situations</td>
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<td>Pupils found Paws .b to be helpful for self-reflection</td>
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<td>Class teachers felt</td>
<td>Paws .b helped pupils become more focused</td>
<td>Teacher</td>
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that their pupils made cognitive, emotional, and behavioural gains

<p>| Example of Paws .b helping a pupil overcome their fear of swimming | Teacher interviews |
| Example of Paws .b helping a pupil overcome their fear of the toilet | Teacher interviews |
| Example of Paws .b helping a pupil express their anger differently | Teacher interviews |
| Example of Paws .b helping a pupil manage their emotions | Teacher interviews |
| Paws .b was calming for certain pupils | Teacher interviews |
| Paws .b hypothesised to be helpful for pupils to manage anxiety | Teacher interviews |
| Example of Paws .b helping a pupil become more open to experience | Teacher interviews |
| Example of Paws .b helping a pupil become less reserved | Teacher interviews |
| Example of Paws .b helping a pupil engage more in lessons | Teacher interviews |
| Paws .b helped improve certain pupils’ behaviour | Teacher interviews |</p>
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<th>The mindfulness teacher felt that pupils made cognitive and emotional gains</th>
<th>No behaviour concerns during Paws .b</th>
<th>Teacher interviews</th>
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<td>Paws .b improved pupils’ ability to notice mind wanderings</td>
<td>Mindfulness teacher interview</td>
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<td>Paws .b challenged pupils’ metacognitive skills</td>
<td>Mindfulness teacher interview</td>
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<td>Example of Paws .b helping a pupil of low cognitive ability connect to their internal experiences</td>
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<td>Paws .b militates against stressors at school and at home</td>
<td>Mindfulness teacher interview</td>
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<td>Pupils found Paws .b to be calming/ relaxing</td>
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<td>There was a positive interface between the Paws .b mindfulness programme, the mindfulness teacher, and the pupils</td>
<td>Paws .b developed pupils’ mindfulness skills for future use</td>
<td>Teacher interviews</td>
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<td>Paws .b as a skill for pupils to use independently</td>
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<td>Most pupils used mindfulness practices outside of Paws .b lessons</td>
<td>Teacher interviews</td>
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<td>Paws .b led to a connection between the pupils and the mindfulness teacher</td>
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<td>Paws .b led to greater mutual respect between pupils and the mindfulness</td>
<td>Mindfulness teacher interview</td>
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<td>Paws .b</td>
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<td>allowed pupils to see a different side to the mindfulness teacher through teacher-pupil sharing</td>
<td>Mindfulness teacher interview</td>
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<td>would quickly build closeness between class teachers and their pupils</td>
<td>Mindfulness teacher interview</td>
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<td>was well-suited to Year-4 pupils</td>
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<td>Pupils enjoyed Paws .b</td>
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<td>was totally new for pupils</td>
<td>Mindfulness teacher interview</td>
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<td>became increasingly excited about Paws .b</td>
<td>Mindfulness teacher interview</td>
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<td>quickly engaged with the Paws .b curriculum content</td>
<td>Mindfulness teacher interview</td>
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<td>The Paws .b curriculum contained useful analogies/metaphors for identifying bodily sensations liked to emotions</td>
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<td>Throughout Paws .b, pupils were increasingly willing to share their experiences</td>
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<td>did not cause problems for pupils</td>
<td>Mindfulness teacher interview</td>
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<td>enabled pupils to catch the experience of mindfulness</td>
<td>Mindfulness teacher interview</td>
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<td>Experience of mindfulness</td>
<td>Pupils <em>caught</em> the experience of mindfulness at different times throughout Paws .b</td>
<td>Mindfulness teacher interview</td>
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<td>Paws .b lasted long enough for a critical mass of pupils to <em>catch</em> the experience of mindfulness</td>
<td>Mindfulness teacher interview</td>
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<td>Once pupils had <em>caught</em> the experience of mindfulness, they engaged more readily with Paws .b mindfulness practices</td>
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<td>The impact of Paws .b was noticeable at the intervention cross-over</td>
<td>Mindfulness teacher interview</td>
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<td>The mindfulness teacher had a positive experience of delivering Paws .b</td>
<td>Paws .b enabled the mindfulness teacher to create a safe space for pupils to undertake mindfulness practices</td>
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<td>Paws .b inspired the mindfulness teacher to embed mindfulness within the while school</td>
<td>Mindfulness teacher interview</td>
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<td>Paws .b as something that the school should do again</td>
<td>Mindfulness teacher interview</td>
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<td>Paws .b became a joy for the mindfulness teacher to deliver</td>
<td>Mindfulness teacher interview</td>
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<td>The mindfulness teacher’s delivery of Paws .b was enhanced by their personal mindfulness practice</td>
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<td>Paws .b did not cause problems for the mindfulness teacher</td>
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<th>What aspects of Aspects of the</th>
<th>Pupils felt that</th>
<th>Pupil focus</th>
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<tr>
<td></td>
<td>Some pupils wanted to change the name of Paws .b</td>
<td>Pupil focus</td>
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</table>
the Paws .b mindfulness programme were perceived to be non-beneficial by experimental and waitlist control pupils, the experimental teacher and the waitlist control teachers, and the mindfulness teacher?

<table>
<thead>
<tr>
<th></th>
<th>Paws .b mindfulness programme could be improved</th>
<th>improvements could be made to the Paws .b curriculum and mindfulness practices</th>
<th>groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Some pupils wanted to include writing activities within Paws .b</td>
<td>Pupil focus groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils wanted to extend the length of the Paws .b curriculum/ change the format of the Paws .b curriculum</td>
<td>Pupil focus groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils felt that Paws .b would have greater utility when they were older</td>
<td>Pupil focus groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pupils wanted the option of keeping their eyes open during Paws .b mindfulness practices</td>
<td>Pupil focus groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils wanted the option of not having to sit in the same chair during Paws .b mindfulness practices</td>
<td>Pupil focus groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils wanted a greater variety of Paws .b mindfulness practices</td>
<td>Pupil focus groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils wanted to extend the length of Paws .b mindfulness practices</td>
<td>Pupil focus groups</td>
</tr>
</tbody>
</table>

Class teachers felt that improvements could be made to the implementation of Paws .b

<table>
<thead>
<tr>
<th></th>
<th>Paws .b could be improved by it being more embedded within school</th>
<th>Teacher interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>It would be ideal for mindfulness teachers to also be class teachers</td>
<td>Teacher interviews</td>
</tr>
<tr>
<td></td>
<td>There is an optimal way to timetable Paws .b</td>
<td>Teacher interviews</td>
</tr>
<tr>
<td>The Paws .b mindfulness teacher felt that the coordination and differentiation of Paws .b could be improved</td>
<td>Paws .b could be improved by more formally action planning pupils’ future use of mindfulness</td>
<td>Mindfulness teacher interview</td>
</tr>
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<td>-------------------------------------------------</td>
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</tr>
<tr>
<td>It would be beneficial for pupils’ class teachers to deliver Paws .b</td>
<td>Good differentiation could consist of delivering Paws .b in small groups</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td>Good differentiation could consist of pre-teaching Paws .b to less ‘able’ pupils</td>
<td>Good differentiation could consist of pre-teaching Paws .b to less ‘able’ pupils</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td>The Paws .b mindfulness programme does have its disadvantages</td>
<td>Some pupils negatively evaluated the Paws .b mindfulness programme and practices</td>
<td>Some pupils felt that Paws .b was boring/ confusing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils disliked learning about the human brain within the Paws .b mindfulness curriculum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils disliked sitting in chairs throughout Paws .b mindfulness practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils were easily distracted during Paws .b mindfulness practices</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils disliked the finger breathing Paws .b mindfulness practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some pupils disliked the more ‘active’ Paws .b mindfulness practices</td>
</tr>
<tr>
<td>Class teachers</td>
<td>Not all pupils used mindfulness practices outside of Paws .b lessons</td>
<td>Teacher</td>
</tr>
<tr>
<td>Questioned the impact and transferability of Paws .b</td>
<td>Class teachers were unsure that positive pupil impact was solely due to Paws .b</td>
<td>Teacher interviews</td>
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<td>-----------------------------------------------------</td>
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<tr>
<td></td>
<td>Easier for class teachers to see the impact of Paws .b on pupils who experience difficulty</td>
<td>Teacher interviews</td>
</tr>
<tr>
<td></td>
<td>Class teachers didn’t feel that 6-weeks was long enough to see the full impact of Paws .b</td>
<td>Teacher interviews</td>
</tr>
<tr>
<td>The mindfulness teacher felt that Paws .b was not sufficiently differentiated</td>
<td>It would be beneficial to differentiate the Paws .b curriculum</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td></td>
<td>It would be beneficial to differentiate the Paws .b mindfulness practices</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td></td>
<td>Differentiating Paws .b mindfulness practices in the whole class distracted more ‘able’ pupils</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td></td>
<td>Behaviour management needs prevented the mindfulness teacher from engaging fully in Paws .b mindfulness practices</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td>The mindfulness teacher felt that Paws .b required careful preparation</td>
<td>The Paws .b requirement that mindfulness teachers be mindfulness practitioners creates a training need</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td></td>
<td>A disadvantage of Paws .b, as a discrete intervention, is that it comes and goes</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td></td>
<td>Paws .b led to some pupils becoming over-familiar with the mindfulness teacher</td>
<td>Mindfulness teacher interview</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pupil over-familiarity, as a result of Paws .b, is challenging for senior staff</td>
</tr>
</tbody>
</table>