



Doctorate in Educational Psychology (DEdPsy)

“I've seen first-hand the difference that it's made to these children's lives”:
An exploration of the use of dogs in six schools in England and Wales.

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Summary

This thesis is divided into three parts: a major literature review (Part 1), an empirical research paper (Part 2) and a critical appraisal (Part 3).

Part 1: Major Literature Review

The literature review is comprised of two sections. Part 1a consists of a narrative review, which aims to provide the background context of the therapeutic use of animals by considering the benefits that have been observed in a wide range of settings, including health and education. Following this, Part 1b consists of a systematic review of the literature, which adopts an international perspective to explore how dogs specifically have been used in education settings across the world.

Part 2: Empirical Research Paper

The research paper in Part 2 details the current study which aims to explore how schools in the UK are currently using dogs to support their pupils. A questionnaire was circulated nationally to recruit schools currently implementing dog-assisted interventions to take part in semi-structured interviews to explore the types of interventions being used in more detail. The methodology, procedure and analysis of the data are presented, and implications of the findings are considered.

Part 3: Critical Appraisal

The critical appraisal in Part 3 provides an overview of the research process and a reflective and reflexive account of the development of both the research itself and of the researcher. Decisions made throughout the research process are considered and the implications of these discussed.

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Abbreviations

AAA – Animal Assisted Activity
AAE – Animal Assisted Education
AAI – Animal Assisted Intervention
AAT – Animal Assisted Therapy
ADHD – Attention Deficit Hyperactivity Disorder
ALN – Additional Learning Needs
ALNCo – Additional Learning Needs Coordinator
ASD – Autism Spectrum Disorder
ASSIA - Applied Social Sciences Index and Abstracts
BEI - British Educational Index
CASP – Critical Appraisal Skills Programme
COIN – Communication and Interaction Needs
DfE - Department for Education
DHK - Dogs Helping Kids
EBD - Emotional and Behavioural Difficulties
ELL - English Language Learners
EP – Educational Psychologist
ERIC – Education Resources Information Centre
ESL - English as a Second Language
HCPC – The Health and Care Professions Council
IPA – Interpretive Phenomenological Analysis
LA – Local Authority
Ofsted - Office for Standards in Education, Children’s Services and Skills
PFT – Pet-facilitated Therapy
PRISMA – Preferred Reporting Items for Systematic Reviews and Meta-Analyses
READ - Reading Education Assistance Dogs
SENCo – Special Educational Needs Coordinator
SREC – School Research Ethics Committee
TA – Thematic Analysis
TEP – Trainee Educational Psychologist
UK – United Kingdom
USA – United States of America
WoS – Web of Science



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An exploration of the use of dogs in six schools in England and Wales.

Part 1: Major Literature Review

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Structure of The Literature Review

This literature review will consist of two sections. Firstly, a narrative review will attempt to provide a broad overview of the topic by considering briefly the evolution of the therapeutic use of animals in healthcare settings, as well as for individuals with specific and identified medical conditions or additional needs. This narrative review will also outline the ways in which dogs have been introduced to school settings and will consider the possible psychological underpinnings that may account for the benefits experienced when using animals in this way.

The second part of the literature review will consist of a systematic review to examine the research specifically focused on the use of dogs in mainstream education settings across the world. This section will conclude with the rationale for the empirical research study and will define the chosen research questions.

Part 1a - Narrative Literature Review

1. Introduction

1.1 Aims of the Narrative Literature Review.

This narrative review aims to provide the background context of the therapeutic use of animals by considering the benefits that have been observed in a wide range of settings, including health and education. Different types of uses of dogs in education settings are introduced and various possible psychological underpinnings of the reported outcomes will also be explored.

1.2 Search Strategy.

Initial searches were conducted between June 2020 and December 2020 using Google Scholar and Cardiff University Library Search. Online academic databases were also searched, including PsycInfo, Education Resources Information Centre (ERIC), Scopus, British Educational Index (BEI), Applied Social Sciences Index and Abstracts (ASSIA), and WoS (Web of Science) to identify related literature. Search terms included 'animals', 'animal-assisted intervention', 'animal-assisted therapy', 'dog', 'health', 'education', 'school', and 'child'. Further online searches were also carried out to gather relevant information about current policy and legislation, and national charity publications were used to gain a better understanding of the UK landscape of animal-assisted therapy.

1.3 Terminology.

The term animal-assisted intervention (AAI) is generally used as a universal term to describe any form of animal-assisted activity (AAA), animal-assisted therapy (AAT) or animal-assisted education (AAE) (Reilly et al., 2020). Although the term pet-facilitated therapy (PFT) can sometimes be used interchangeably instead of AAT, this paper will predominantly use AAT to encompass both terms. Whilst AAA and AAT both refer to interventions that involve the use of trained animals and are carried out by skilled individuals, it is important to note the distinctions between the two (Kirnan et al., 2016). AAAs tend to be informal and unstructured and do not usually aim to address specific targets for the individuals involved. Rather, the focus of AAAs is often more centred around improving the wellbeing or quality of life of those participating (Kirnan et al., 2020). AAT on the other hand is a more planned

intervention and is carried out with predetermined, individualised goals in mind, with a view to improving the function of an individual in a particular area (Kirnan et al., 2016). In AAT, the progress made towards these goals is carefully monitored and recorded. AAT is also generally supervised by a trained professional in the relevant field (Reilly et al., 2020). AAE is similar to AAT, in that AAE tends to involve an intervention that aims to address a specific goal for the individual. However, AAE is carried out in education settings with the focus generally on specific academic targets (Kirnan et al., 2020). As AAI is widely used as an umbrella term for AAA and AAT, this paper will predominantly refer to AAI to encompass any type of animal-human interaction or intervention.

2. The Historical Context of the Therapeutic Use of Animals

2.1 Healthcare.

Historically, animals have been used widely in healthcare settings, with Florence Nightingale noting in 1869 that animals had beneficial effects on patients' recovery (Fedor, 2018). A number of specific physiological benefits have been identified following the interaction of patients with animals, including reductions in blood pressure, heart rate and cortisol levels (Lundqvist et al., 2017). Additional benefits of the use of animals with patients include a reduction in loneliness and anxiety, lower pain scores, and positive effects on attitudes, social behaviours and nutrition (Matuszek, 2010). In paediatric patients, visits from therapy animals have been associated with significant increases in happiness, positive mood and positive interactions of the children (Kaminski et al., 2010). Children with developmental disorders who were visited by a therapy dog showed increases in happiness, playfulness, energy and interactions (Martin & Farnum, 2002). Patients with psychiatric conditions demonstrated significantly lower levels of anxiety following sessions of AAT, as well as increased socialisation and motivation (Arkow, 2004). In palliative care, the physical presence of a dog was reported to be calming and comforting, and therapy dogs were proposed to reduce loneliness and provide patients with something to look forward to. AAT was also reported to be beneficial for geriatric populations by promoting the social interaction of these patients (Phelps et al., 2008).

2.2 Specific Learning Needs.

Animals have also been commonly utilised therapeutically with individuals with particular developmental disorders. For children with Autism Spectrum Disorder (ASD), a variety of benefits of AAI have been noted (Siewertsen et al., 2015). Specifically, it is suggested that AAI can lead to improvements in the social functioning and sensory processing of children with ASD, as well as a reduction in the severity of their ASD traits (Ward et al., 2013). These improvements have also been noted in environments outside the therapeutic setting, suggesting that the benefits of AAI for individuals with ASD may extend beyond the AAI sessions themselves. It is also proposed that AAI can help to improve the prosocial behaviour of children with ASD (Grandgeorge et al., 2012), further demonstrating the benefits of AAI for the social functioning of individuals with ASD. In addition to the improvements in social functioning and sensory processing, AAI have also been shown to have physiological benefits for children with ASD. The cortisol levels of children participating in AAI were markedly reduced, indicating lower levels of stress in these individuals (Viau et al., 2010). Furthermore, the problematic behaviours of the children were also noted to have decreased, suggesting additional benefits of AAI for these individuals. Animals have also been included in interventions for individuals with Attention Deficit Hyperactivity Disorder (ADHD), with a number of benefits reported (Busch et al., 2016). It is proposed that the severity of the symptoms experienced by children with ADHD can be significantly reduced by the inclusion of animals within interventions. Additionally, the problem behaviours exhibited by these children were found to be lower following AAI (Schuck et al., 2015).

2.3 Schools.

Animals have also been introduced in classrooms and education settings (le Roux et al., 2015). Interactions with a therapy dog have been found to moderate the effects of stress by lowering children's heart rate and blood pressure, which can lead to a reduction in the symptoms of anxiety (Jalongo et al., 2004). AAI have also been used to address students' wellbeing, with those involved demonstrating significant increases in mood and wellbeing, and significant decreases in anxiety (Graifoner et al., 2017). The UK Government provides some general guidance for schools and points for consideration when including animals in education settings from a health perspective, to help control the spread of infectious diseases (UK Health Security Agency, 2022).

2.4 Reading Programmes.

In addition, specific programmes have been developed for the use of dogs to support pupils in particular curriculum areas. The Reading Education Assistance Dogs (READ) programme was developed by Intermountain Therapy Animals in America in 1999 and was the first official programme to promote children reading to dogs (Hall et al., 2016). The focus of the READ programme is to improve the reading skills of pupils with low reading levels. It is hypothesised that pupils do not experience the same degree of stress and anxiety when they read to a dog, compared to when they read to an adult. This is proposed to be due to the non-judgemental nature of the dog compared to an adult observer, which enables pupils to relax and focus more on reading (Intermountain Therapy Animals, 2012). The READ programme has demonstrated significant success in improving both pupils' reading skills and their self-esteem and has been suggested to lead to reductions in pupils' anxiety (le Roux et al., 2014). Subsequently, similar programmes have been developed for use in schools and educational settings around the world (Jalongo et al., 2004).

The Bark and Read Foundation was set up by the Kennel Club Education Trust in the UK (The Kennel Club, 2011). This foundation supports the work of charities that take dogs into schools to help children with their reading skills by providing grants to these charities and their volunteers. These charities aim to address literacy problems by helping children to develop a love of reading through reading to a specially trained support dog. It is suggested that reading with dogs not only helps to improve pupils' reading skills, but also has a positive impact on their confidence and self-esteem and helps to promote positive behaviour (The Kennel Club, 2018). The Kennel Club Educational Trust's (2018) Standards of Practice for Providers of Animal Assisted Interventions in Schools offers guidance about how a dog should be used in a school, with consideration given to health and hygiene, dog training and behaviour, and appropriate handling and management of dogs in schools (The Kennel Club, 2018). The 11 charities that work with the Bark and Read Foundation, including Dogs for Good, Pets As Therapy and Therapy Dogs Nationwide, participated in the creation of these Standards of Practice and committed to adopt them within their work. As a result, this should help to formalise the use of dogs within schools and ensure that sufficient

thought and consideration is given to the many aspects and implications of these types of interventions.

Through the Therapy Dogs Nationwide's Paws & Read programme, a dog and a volunteer can attend a school for children to read to the dog (Therapy Dogs Nationwide, 2021). These dogs are assessed to ensure they have an appropriate temperament and must have completed at least 3 months of visiting in an alternative environment, such as a residential care home or a hospital, before they are able to go into schools. Therapy Dogs Nationwide also provides free intervention packages to help target specific areas, such as pupils' social, personal, numeracy and literacy skills.

2.5 Training for School Dogs.

Dogs Helping Kids (DHK) was a charity based in the UK that previously provided a specific training programme for schools wishing to introduce a school dog. Through this charity, a dog could complete a three-year training programme and was required to pass eight assessments in order to be deemed a 'certified' DHK school dog (International Companion Animal Network, 2020). Once certified, the dogs were then assessed each year to ensure that their training was maintained. However, this charity is now closed and no longer appears to offer this training programme for school dogs (Dogs for Good, 2020). It is still possible for dogs to receive accreditation as an official therapy dog in the UK through a number of different charities, including Pets as Therapy and Therapy Dogs Nationwide. Despite this, there is no official requirement from the Department for Education (DfE) for schools to register or train the dogs that are used in AAI (Massey, 2019).

2.6 Resident School Dogs.

Although charities such as Pets as Therapy and Therapy Dogs Nationwide have enabled dogs to visit schools to be used within discrete reading interventions, there appears to be a more recent trend towards having a resident dog onsite within the school on a more permanent basis. The use of school dogs to help improve pupil wellbeing has been highlighted in recent years in the media. Respected historian and educator Sir Anthony Seldon suggested that every school in the UK could benefit from having a school dog and is quoted as stating that

this was a cost-effective approach that could impact upon pupil wellbeing by improving pupils' feelings of security at school (Coughlan, 2019). Former Education Secretary Damian Hinds also noted that an increasing number of schools have introduced wellbeing dogs and proposed that these dogs have a significant impact for pupils (Coughlan, 2019).

Consistent with this, the use of dogs in schools in the UK appears to have become more widespread. This has been commended by the Office for Standards in Education, Children's Services and Skills (Ofsted) during school inspections in England, with them noting how much of a positive impact this has had on pupils. For example, a college in East Sussex was praised for the calming influence that their dog had on pupils (Ofsted, 2019b). Similarly, another college in London was commended for the comfort provided by their dog, with Ofsted noting that this was particularly beneficial for worried or anxious pupils (Ofsted, 2019a). This college was reported to use its therapy dog in several ways, with the dog meeting reluctant pupils at the school gates and going on timetabled walks during the school day with anxious pupils. The use of the dog in this way was suggested to be beneficial for supporting pupils in talking more openly with staff, which they would otherwise find difficult (Craggs Mersinoglu, 2019). However, despite this increasingly widespread use of dogs in schools, there is an absence of documented statistics to record the number of schools in the UK that are using dogs to support pupils, and the DfE provides no information to detail the number of schools that are implementing dog-assisted interventions (Massey, 2019).

The Dogs Trust discusses the impact of the use of dogs in schools from the dog's perspective and raises some critical points for consideration (Dogs Trust, 2021). These include ensuring appropriate responsibility is taken for the dog within the school, as well as highlighting potential risks of introducing a dog to a school environment. Despite strongly advising against the use of dogs within schools, the Dogs Trust provides some guidance on the inclusion of a dog within the school environment to ensure that priority is given to the dog's wellbeing (Dogs Trust, 2021). Dogs Helping Kids and Dogs for Good (Dogs for Good, 2020) also collaborated to produce a guidance document for schools aimed at helping them with the successful introduction of a dog into their setting. Like the Dogs Trust's guidance, this information emphasises the dog's wellbeing. Some of the key factors outlined include

ensuring that the dog has its own area to rest, and consideration of the toileting and hygiene implications of having a dog on the school site (Dogs for Good, 2020). With respect to risk assessments and insurance, both the Dogs Trust (2021) and the Dogs Helping Kids/Dogs for Good (2020) guidance recommended that schools should undertake a comprehensive risk assessment and ensure that they have appropriate public liability insurance that covers the dog and the planned activities it will partake in. Another of the key considerations that is raised by both the Dogs Trust (2021) and by Dogs Helping Kids/Dogs for Good (2020) is that some staff members, pupils, or parents may have concerns about the introduction of a dog into the school which it is important to address. These concerns could include a fear of dogs, allergies, or cultural issues surrounding dogs, and are likely to impact upon the ways in which a dog could be utilised within the school. Whilst these guidance documents may be useful for schools looking to introduce a dog, and they offer some helpful recommendations, they are in no way a replacement for appropriate national policy and legislation governing the use of dogs in schools.

2.7 Use of Dogs as a Therapy Animal.

Although a variety of animals have been used in AAls, including horses (Wilkie et al., 2016), dolphins (Stumpf, 2016) and guinea pigs (Brelsford et al., 2017), dogs are frequently selected for use in AAls, as they are the most common companion animal and tend to display behaviours that are typically interpreted as happy, friendly and affectionate (Lundqvist et al., 2017). Additionally, dogs can act to increase social interactions amongst people and are sometimes described as ‘social buffers’ or ‘social catalysts’ (Reilly et al., 2020), which makes dogs particularly useful for inclusion in AAls that are focused on improving aspects of social functioning, or where rapport-building is advantageous for the intervention.

3. Psychological Underpinnings

A number of possible mechanisms have been proposed in the literature on AAI, with a view to offering some explanation for the beneficial effects of AAI that have been noted. Although it is not within the scope of this literature review to explore each of these

mechanisms in detail, a brief overview will be provided to offer some context for the systematic review in Part 1b.

The first group of these proposed mechanisms assumes that therapy animals possess intrinsic attributes which contribute positively to the AAI, and result in the documented benefits noted in the literature (Kruger & Serpell, 2010). As a result of these qualities, the presence of the animal within the therapeutic setting is sufficient for the associated benefits to arise.

One such mechanism suggests that the presence of animals results in a calming effect for the human participants, possibly through an innate attraction of the participants' attention towards other living organisms present (Kruger & Serpell, 2010). This idea is based on the biophilia hypothesis (Wilson, 1984), which states that humans have an evolutionary tendency to focus attention towards animals and other living organisms within the environment in order to increase survival chances by attending to environmental cues which may be suggestive of safety or danger. As a result, friendly animals would likely have calming effects on humans, whereas aggressive animals would act to increase stress or arousal. Given that animals included in AAI have generally been specially selected and trained for this purpose, it would seem logical that, according to the biophilia hypothesis, these animals would have calming effects on the human participants. An alternative explanation for the calming effect of animals has been drawn from learning theory. This explanation suggests that the inclusion of animals within therapeutic sessions may act to divert the participant's attention away from any anxiety-inducing stimuli being faced (Brickel, 1982). As a result, the presence of an animal may help to reduce arousal and thus decrease the level of anxiety experienced by an individual.

A further proposed mechanism through which animals may contribute positively to AAIs suggests that animals function as social mediators, and therefore may act to strengthen relationships between participants and therapists within AAI (Kruger & Serpell, 2010). It is hypothesised that the presence of an animal within the therapeutic context offers a neutral subject which may provide opportunities for conversation to take place between those involved in the AAI. This social-facilitation effect may offer some explanation for many of the benefits observed as a result of AAIs.

Another proposed mechanism is taken from attachment theory and considers the bonds that are formed between animals and humans (Kruger & Serpell, 2010). This explanation suggests that the benefits observed following AAI arise from the attachment that is formed between the human participant and the therapy animal. It is also proposed that the presence of an animal may help to lessen the stress that would typically otherwise be felt during the early stages of therapeutic interventions, by acting as a form of transitional object (Kruger & Serpell, 2010). Through the attachment that the participant forms with the animal as a transitional object, the levels of stress for the participant are thought to be lowered. Additionally, companion animals are viewed as being able to sense people's feelings and emotions, and respond to these in a non-judgemental way (Kruger & Serpell, 2010). Drawing on the ideas of Rogers (1957) and the importance of 'unconditional positive regard', it is therefore the unconditional love provided by the therapy animals that is regarded as a possible explanation for the positive outcomes observed as a result of AAIs.

The second group of mechanisms through which animals are proposed to lead to the positive outcomes observed in AAIs suggest that animals are living instruments that can lead to cognitive and behavioural changes (Kruger & Serpell, 2010).

One such mechanism postulates that the inclusion of animals within AAIs can result in beneficial changes to individuals' self-concept and can improve the perceptions they have about themselves. By interacting with the therapeutic animals, individuals are able to learn appropriate social behaviours through the responses that the animals provide (Kruger & Serpell, 2010). These appropriate social behaviours are then reinforced as a result of the positive responses received from the therapy animal, which may act to improve individuals' self-concept, for example by increasing their self-esteem (Kruger & Serpell, 2010).

Another possible mechanism suggests that the use of animals within AAIs can help to bring about behaviour changes in those involved, as individuals have a tendency to modify their behaviours in order to conform to certain expectations or to assume a particular role (Kruger & Serpell, 2010). This mechanism may offer some explanation for the positive outcomes observed as a result of AAIs which provide opportunities for individuals to train or care for the animals involved. The process of training or caring for the animals enables the

individual to develop certain behaviours, or to learn new behaviours, by allowing them to take on the role of the teacher or the caregiver (Kruger & Serpell, 2010).

In addition to these proposed mechanisms, it is also important to consider the role that the hormone oxytocin may have in contributing towards some of the beneficial effects observed as a result of AAls. Oxytocin has been shown to lead to a number of positive physiological effects, such as a reduction in heart rate, blood pressure and cortisol levels (Li et al., 2019; Petersson, 2002). In addition to the physiological effects of oxytocin, the hormone has also been associated with psychological and social benefits. These benefits include a reduction in depression and anxiety, as well as an increase in social interactions (Uvnäs-Moberg, 2003). It has been demonstrated that interactions between animals and humans may act to increase levels of oxytocin (Handlin et al., 2011), and therefore many of the beneficial effects observed as a result of AAls could be understood through a mechanism mediated by the hormone oxytocin.

Part 1b – Systematic Literature Review

1. Introduction

A systematic literature review is undertaken using explicit, accountable, and rigorous methods (Gough et al., 2017). Systematic reviews are recommended by Siddaway et al., (2019) due to their transparent, unbiased, and comprehensive nature, meaning that they are often viewed as being of higher quality than alternative types of literature review. A systematic synthesis was therefore chosen as a way of reviewing the literature, to identify key themes and concepts that contribute towards the understanding of the topic (Siddaway et al., 2019).

1.1 Rationale and Literature Search Question.

Following the narrative review in Part 1a, a systematic synthesis was conducted in order to critically evaluate the existing literature surrounding the therapeutic use of dogs in schools. Much of the related research has previously looked exclusively at the use of different animals within interventions for individuals with specific medical conditions or identified additional needs. There is also a lack of research in this area undertaken within the UK. As a result, this systematic review adopted an international perspective with a view to answering the following question:

How have dogs been used in mainstream educational settings across the world and what outcomes have been reported?

1.2 Method.

In order to provide a comprehensive analysis of the existing research in this area, a thematic synthesis approach was chosen with the aim of reviewing all studies relevant to the chosen question, irrespective of their methodological underpinnings, modelled on the approach of Woods et al., (2011). This allowed for the inclusion of both qualitative and quantitative research, as well as mixed-methods approaches. The six-stage process for the thematic synthesis is presented in Table 1 below.

Table 1*Thematic Literature Synthesis Framework*

Stages 1 & 2	Literature searching and reference harvesting to locate relevant research studies
Stage 3	Filtering of research studies according to inclusion and exclusion criteria
Stage 4	Development of a coding framework for evaluation of research studies
Stage 5	Coding of included research studies
Stage 6	Presentation and description of review findings

Note from Woods et al. (2011).

1.3 Search Strategy.

The literature for this systematic review was compiled from online databases including PsycInfo, Education Resources Information Centre (ERIC), Scopus, British Educational Index (BEI), Applied Social Sciences Index and Abstracts (ASSIA), and WoS (Web of Science). The chosen search terms were “Pet Therapy”, “Dog Therapy”, “Animal Therapy”, “Canine Therapy”, “Animal Intervention”, “Child”, “Teen”, “Adolescent”, “Youth”, “Primary aged” and “School aged”. A full list of search terms is included in Appendix A. Due to the identified lack of research in this area, additional search terms such as ‘Psychology’ and ‘Educational Psychology’ were not included as it was felt that these restricted the literature that was identified for inclusion within the systematic review. Additional literature was identified using Google Scholar and through reference list harvesting. The literature searches took place between June and September 2020.

1.4 Inclusion and Exclusion Criteria.

Initial inclusion and exclusion criteria were formulated before undertaking the review. These criteria were then refined throughout the review process (Siddaway, 2014) until the following final inclusion and exclusion criteria were decided upon (see Table 2):

Table 2

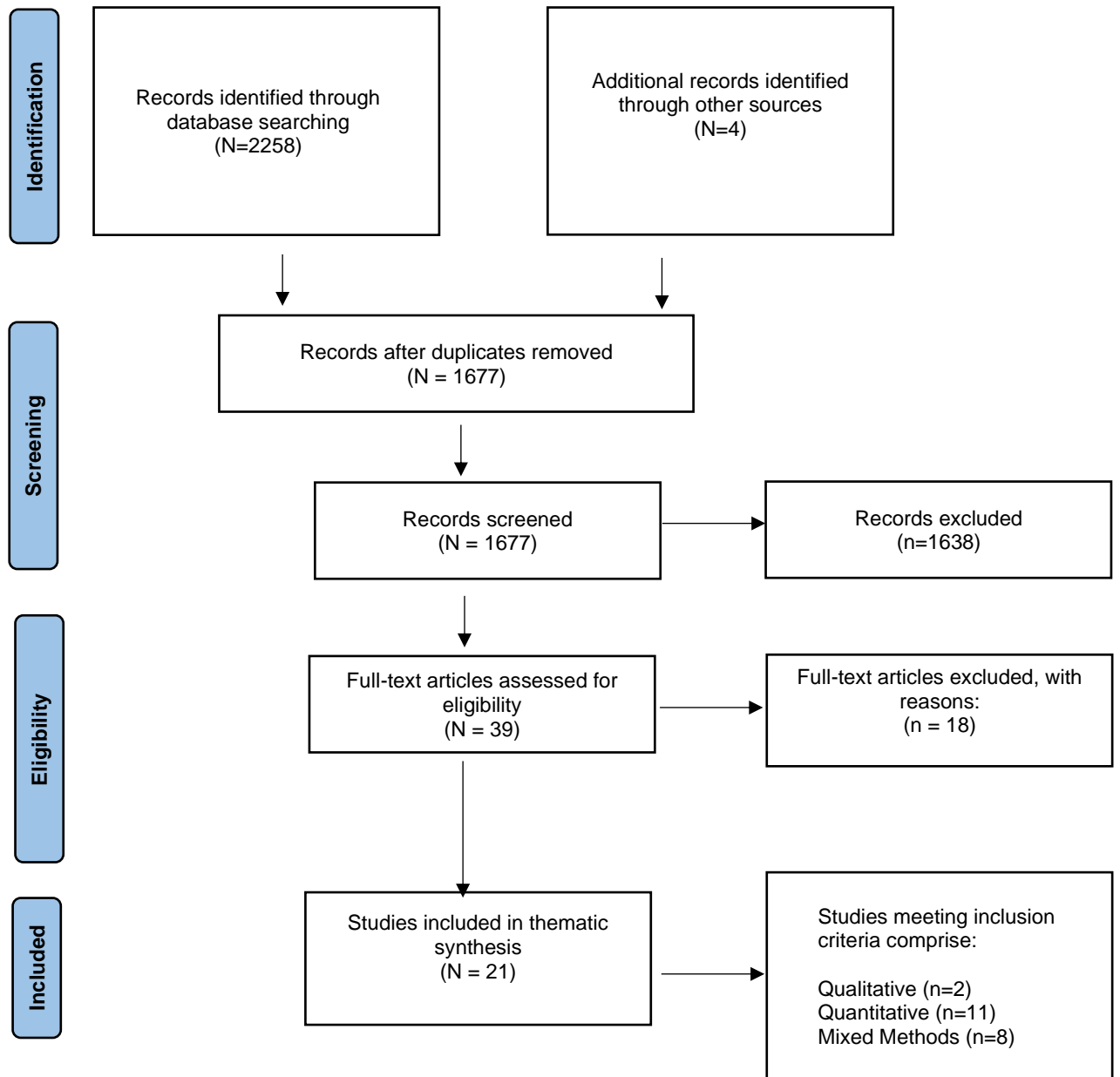
Inclusion and Exclusion Criteria

Inclusion Criteria	Rationale	Exclusion Criteria	Rationale
Empirical studies utilising an experimental design or a case study design.	Experimental evidence is considered to have the most weight (Gough, 2007)	Research with a specific ALN focus.	As demonstrated through the narrative review, the use of animals to support pupils with ALN is an area with an established research base.
Research that explores the use of a dog within an education setting.	Directly relates to chosen systematic review question.	Research that explored the use of other animals.	Directly relates to chosen systematic review question.
Conducted in a mainstream school setting.	Directly relates to chosen systematic review question.	Studies that did not work directly with animals.	Experimental evidence is considered to have the most weight (Gough, 2007)
Conducted with pupils aged 3-18.	To include children and young people of school-age.		
Published between 2000 and 2020.	To elicit the most recent literature.		
Published or available in English language.	For ease of understanding.		
Published in a peer-reviewed journal.	To ensure the validity, quality, and originality of the literature had already been independently assessed.		

Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) (Moher et al., 2009) guidelines for reporting of the systematic review were followed, as recommended by Siddaway et al. (2019). A total of 1677 studies remained after duplicate papers were removed. The titles and abstracts of these studies were assessed against the inclusion and exclusion criteria. This screening process elicited 39 studies. The full text of these studies was then examined in order to ascertain the most relevant research to include within the literature review. 18 studies were excluded, with reasons. A list of these studies, with reasons for their exclusion, is included in Appendix B. As a result, 21 papers remained for inclusion within the literature review. The PRISMA flow diagram is presented in Figure 1.

Figure 1

PRISMA Flow Diagram



2. Presentation of findings

2.1 Data Extraction.

Stages 4 and 5 from Woods et al.'s (2011) Thematic Literature Synthesis Framework were used to guide the process of data extraction. The 21 included studies were read, and their content examined multiple times in order to develop an appropriate coding framework. The identified codes were then organised into themes to present the main findings. Thematic maps of these findings are presented in Figures 2, 3 and 4 below.

2.2 Quality Appraisal.

In order to critically evaluate the 21 studies that were included in the systematic review, the Critical Appraisal Skills Programme (CASP) Checklists were used to assess the papers for quality, trustworthiness and relevance (CASP, 2018). The CASP checklists were particularly useful given the range of methodologies that had been adopted in these studies. The aims, participant sample, research design and analysis of the included studies were assessed, and a critical appraisal of each of these studies is included in Table 3.

2.3 Outcomes.

The characteristics of the 21 studies that were included in this literature review can be found in Table 3. Approximately half of the studies (12) examined specific dog-assisted reading interventions (presented first in Table 3 below), and the remaining 9 studies investigated alternative uses of dogs in schools (presented in the second half of Table 3). 11 of the studies used quantitative methods, 2 used qualitative methods and 8 utilised a mixed-methods approach. All of these studies were published in academic journals, between 2000 and 2020. All but 3 of these papers were published between 2010 and 2020, demonstrating that this topic is an increasing area of interest. Approximately half of the research originated from the USA (11), with only one study conducted in the UK. The remaining papers originated from Austria (3), Italy (2), Australia (1), Canada (1), the Czech Republic (1), and South Africa (1). The participants in these studies were all attending mainstream schools and aged between 3- and 18-years-old.

Table 3*Characteristics of Included Studies*

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Barber & Proops (2019)	UK	To evaluate the effect of reading to a dog on reading performance, reading motivation and mood	20 participants: 11-12 years old. Participants attended a nurture class within a mainstream secondary school and had additional educational and emotional needs.	Within-subjects design with experimental and control conditions. Questionnaires and checklists. Open-ended questions and written responses.	Coding of participants' reading performance, and comparison using t-test. Chi-squared test and binomial tests to analyse the checklists. Thematic Analysis of	There was a significant increase in fluency and pacing, better reading behaviour and more positive emotions reported. There was no significant difference in participants' scores on the	The inclusion of a control condition, where the same pupils also read to teacher aimed to increase the reliability of the results, but in the absence of a true control group the internal validity of the research is compromised. This study included pupils who were secondary school aged, providing a broader perspective about the use of dogs with an older age-group of participants. This study focused on low attainment pupils, which reduces the external validity of the research

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
					participants' qualitative reports.	attitude questionnaire.	<p>and lowers the generalisability of these findings for pupils with higher attainment.</p> <p>Participants took part in four sessions over three weeks, providing a more longitudinal perspective to this research.</p> <p>The researcher in this study used her own dog, which may have introduced a level of researcher bias in this research.</p>
Bassette & Taber-Doughty (2013)	USA	To evaluate the effect of a dog reading visitation programme on academic engagement	3 participants: 7 and 11 years old in an SEN class Participants attended an	Multiple probe across student single-subject design.	Visual data analysis. Percent of non-overlapping data	All three participants showed increases in on-task behaviour	<p>The internal validity of this research is compromised as the study did not include a control group.</p> <p>This study took place over 4 weeks, which provides a longitudinal perspective to this research.</p>

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
			SEN class within a mainstream elementary (primary) school Emotional and Behavioural disabilities	Implementation of a dog reading program. Observations Interviews with students and teacher for social validity.	between baseline and intervention.		The quantitative, multiple probe design controlled for possible learning or carry-over effects as a result of student exposure to reading. The small sample size is a major limitation for this study.
Kirnan et al. (2016)	USA	To evaluate the effect of therapy dogs on reading for all pupils	169 participants: 5-10 years old	Quasi-experimental between-subjects design with	t-tests Analysis of covariance	The only significant improvement was for kindergarten-aged children.	This study included a control group, but there was no random assignment to groups. This reduces the internal validity of this research.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
				<p>experimental and control group.</p> <p>Standardised reading tests.</p> <p>Interviews.</p>	<p>Analysis of interviews providing direct quotes</p>	<p>Interviews also suggested behavioural benefits</p>	<p>The large sample size is a strength of this study and increases the statistical power.</p> <p>This study adopted a quasi-experimental design, which means there may be alternative explanations for the findings.</p> <p>This study utilised a mixed methods design, which provides qualitative and quantitative data.</p> <p>However, it is unclear how qualitative information was analysed. In the absence of an in-depth form of qualitative analysis some key themes may have been missed.</p>

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
							<p>Participants read to dogs in groups, making it difficult to attribute the findings to the presence of the dog.</p> <p>All abilities of reading were included in this study, which increases the external validity and generalisability of this research.</p> <p>This study took place over a whole school year providing a longitudinal lens.</p> <p>The findings are suggestive of greater improvements in reading for younger children which has significant implications for how these types of dog-assisted interventions are implemented.</p>

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Kirnan et al. (2020)	USA	To evaluate the effect of a dog-assisted reading programme on general behaviour of participants	4 participants. Participants attended an SEN class within a mainstream elementary (primary) school	Single case study design. Implementation of a dog-assisted reading programme. Structured interviews with teachers and professional staff. Behavioural data.	Chi-square analysis. Analysis of effect sizes using Cohen's d. Review of behavioural data and daily logs. Analysis of interviews to identify emergent themes.	There was a significant behavioural improvement for 1 participant	This study utilised a longitudinal design and took place over two years, allowing for findings to be evidenced over time. Results were reported post-hoc from the available data, giving high external validity for the findings and reducing potential biases. The behavioural logs in this study focused on negative behaviours, which reduces the opportunity to examine the effect on behaviours more broadly. It is not clear exactly how old these participants were at the time of the study, making replication difficult.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
				Daily logs and notes.			The small sample size is a limitation of this study.
Kirnan et al. (2018)	USA	To evaluate the effect of therapy dogs on reading for ELL and non-ELL pupils	169 participants: 5-10 years old	Quasi-experimental between-subjects design with experimental and control groups. Standardised reading tests.	t-tests Analysis of covariance	A second year of the reading programme was evaluated and suggested a significant improvement for kindergarten and for 1 st grade pupils. There were similar improvements for	This study was conducted as a follow-up to the previous study by Kirnan et al. (2016) and data from an additional school year was available for analysis, which allowed for a longitudinal analysis. The large sample size is a strength of this study. These findings provide possible evidence for longer-term benefits, as opposed to a novelty effect of a new intervention. This is a key finding, as other studies have

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
						both ELL and non-ELL pupils	questioned the novelty effect as a possible alternative explanation for their results. This study adopted a quasi-experimental design with a lack of random assignment to groups, which reduces the internal validity of the research.
Lenihan et al. (2016)	USA	To evaluate the effect of reading in the presence of a dog on reading ability and attitudes	15 participants: 7 and 8 years old	Between-subjects design with experimental and control groups. Curriculum-based measures.	t-tests Mann-Whitney U tests Wilcoxon Signed Rank test	Dog group: no significant difference in reading scores. Control group: Significant decrease in academic scores.	This study utilised a between-subjects design whereby both a control group and an experimental group of participants took part. This increases the internal validity of this research. This study took place over 5 weeks providing a longitudinal perspective.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
				Reading attitude survey.			<p>The small sample size is a limitation of this study.</p> <p>There was a high drop-out rate in control group which threatens the validity of these findings.</p> <p>The significant decrease in academic scores for the control group was highlighted as a surprising finding.</p>
Levinson et al. (2017)	USA	To evaluate the effect of reading to a dog on oral reading fluency	45 participants: 5-11 years old	Within-subjects design with experimental and control conditions.	Analysis of effect sizes using Cohen's d. Analysis of Variance with	Reading to the dog increased reading fluency.	This study included a control condition where the same participants also read to their peers. Counterbalancing was achieved through the groups then swapping conditions, which may have helped to increase the internal validity of this research.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
				Curriculum-based measures. Reading attitude survey.	Repeated Measures. Friedman test Independent Samples and Dependent Samples t-tests. Mann-Whitney U tests. Wilcoxon signed-rank tests.		Participants took part in two 5-week blocks providing a more longitudinal perspective to this research.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Linder et al. (2018)	USA	To evaluate the effect of a dog reading programme on reading skills and attitudes	28 participants: 7-8 years old	Between-subjects design with experimental and control groups. School-based assessment measures. Reading attitude survey. Rating scales.	Analysis of Variance with Repeated Measures. Wilcoxon signed-rank tests.	There was no significant change in reading skill scores. There was no significant change to recreational reading attitudes. There was a significant increase in academic reading attitudes for the dog group.	This study included a control group, and randomly assigned participants to groups, both of which increase the internal validity of this research. The reading programme took part over 6 weeks providing a longitudinal perspective. Participants had to have average literacy skills to be included in this reading programme, which helps to increase the generalisability of the research for individuals with typically developing reading skills.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
le Roux et al. (2014)	South Africa	To compare reading rate, accuracy and comprehension when participants read in the presence of a dog, an adult, a teddy bear or alone	102 participants: 7-13 years old	Between-subjects design with experimental and control groups. Standardised reading tests. Questionnaire. Implementation of the READ program.	Eta ² Least Significant Difference test Analysis of effect sizes using Cohen's d.	The dog group scored higher on reading comprehension.	This study included both a control group and multiple experimental groups, with random assignment of participants to groups. This increases the internal validity of this research. The large sample size increases the statistical power of this research. This study took place over 10 weeks providing a longitudinal lens. Additional qualitative data was collected but not analysed, with no explanation given for this. Valuable insights that could have been provided by the in-depth analysis of the qualitative data have therefore potentially been missed.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Rousseau & Tardif-Williams (2019)	Canada	To evaluate the effect of a therapy dog on motivation and persistence of children reading a challenging passage	17 participants: 6-8 years old	Within-subjects design with experimental and control conditions. Tests of basic reading skills. Standardised assessments of reading skills. Checklists. Observations	A multivariate repeated-measures analysis of variance with two levels. Wilcoxon signed-rank test. Analysis of checklists and observations	The presence of the dog increased reading motivation and persistence.	This study utilised a within-subjects design where the same children read in both the 'dog present' and 'dog absent' conditions. However, the absence of a true control group compromises the internal validity of the research.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Schretzma yer et al. (2017)	Austria	To compare reading performance in presence of a dog and without a dog	36 participants: 9-10 years old	Within-subjects design. Standardised reading tests. Non-standardised reading assessment. Observations . Physiological measures.	Shapiro-Wilk test Analysis of effect sizes using Cohen's d. Spearman's rank correlation coefficient. t-tests Mann-Whitney U tests	There was no effect on reading performance scores, but children improved in a repeated reading task in the presence of dog. There was a calming effect of the presence of the dog, which was evident through behavioural measures.	Participants took part in two sessions each, spaced 1 week apart, where one of the sessions included the dog. This study did not utilise a true control group which compromises the internal validity of the research. Participants were said to have 'serious problems' with reading. This is a subjective judgement made by the researcher and therefore makes replicability of this research difficult. This also limits the generalisability of the findings for pupils with differing reading abilities. Both physiological parameters and behavioural variables were included

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
					Wilcoxon Signed Rank test	<p>There was no impact on heart rate.</p> <p>Pupils were more aroused in the presence of the dog.</p> <p>There were short term positive effects on motivation and reading performance.</p>	for analysis, providing opportunity for the triangulation of data.
Sorin, et al. (2015)	Australia	To evaluate the effects of a dog in the classroom on reading, social/emotiona	11 participants: 5 -11 years old	Case study design. Implementat ion of the	Analysis of interviews to explore emergent themes.	Reading scores and attendance improved.	This study did not include a control group which reduces the internal validity of this research.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
		l skills and motivation to attend school		Classroom Canines Program. Semi-structured interviews with students and teachers. Observations . Attendance records. Standardised reading tests.	Comparison of pre- and post- reading levels. Analysis of attendance data.	Children were more motivated to learn, felt better about themselves and got along better with peers.	This study took place over 10 - 20 weeks, but the exact duration was not clear, making replication difficult. This study adopted a mixed-methods design, providing both qualitative and quantitative data. This provides the opportunity for triangulation of data. The small sample size is a limitation for this study. Only students who were identified as having difficulties with reading were eligible to take part in the program. This reduces the generalisability of these findings.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Correale et al. (2017)	Italy	To explore the effects of a dog-assisted activity programme on wellbeing and social integration	21 participants: 9-10 years old	Implementation of a Dog-Assisted Activity programme. Behavioural screening tool. "Paper and pencil" diary entries. Unstructured interview with the SEN teacher.	Analysis of pre- and post-measures from the behavioural screening tool. Direct quotes from interviews.	Children were able to express emotions and show new behaviours	This study did not include a control group which reduces the internal validity. This programme involved 5 biweekly sessions, allowing for data to be gathered across time. Direct quotes were provided as qualitative data. However, without an in-depth form of qualitative analysis some key themes may have been missed.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Dicé et al. (2017)	Italy	To promote the understanding of primary emotions in children through interactions with animals	21 participants, aged 8 years old	Implementation of an Animal Assisted Intervention Observational study	Observational data	Participants demonstrated an increased understanding of their own emotions. Social relationships were enhanced amongst the group.	This study did not include a control group, reducing the internal validity of the research. This study did not include pre- or post- measures, resulting in largely subjective judgments about the participant's increased understanding of emotions. It is also important to recognise the subjectivity of observational measures.
Gee, Belcher, et al. (2012)	USA	To investigate the effect of the presence of a dog on object recognition performance	20 participants 3-5 years old	Two-way within-subjects factorial design with experimental and control conditions.	Two-way within-subjects ANOVA	Object recognition was faster and more accurate with dog present.	This study included a control condition with a human present as opposed to a dog, but without a true control group the internal validity of the study is decreased. The sample size was small overall which may reduce the statistical

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
							<p>power of this study, but each child was measured multiple times and acted as their own control in an attempt to increase the internal validity of the study.</p> <p>Even children who did not interact with or overly like the dog were shown to have benefited from its presence. This is an important finding as it suggests that there is something more intrinsic, in addition to the children's affinity towards the dog, that explains the results.</p>
Gee, Gould, et al. (2012)	USA	To investigate the effect of the presence of a dog on speed of categorising	17 participants 3-5 years old	Three-way within-subjects factorial design.	Three-way within-subjects ANOVA	Real dog: children categorised animate objects more quickly, as it was proposed	This study included control conditions involving a stuffed dog and a human. However, in the absence of true control group the

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
		animate and inanimate objects			t-tests	that the presence of the dog helped them restrict their attention to the demands of the task	internal validity of the research is compromised. Although the sample size was small overall, each child was measured multiple times and acted as their own control.
Gee et al. (2007)	USA	To investigate the effect of the presence of a dog on speed and accuracy of motor skills	14 participants 4-6 years old	Two-way mixed model factorial design with experimental and control conditions.	Two-way mixed model ANOVA	Children were faster when dog present. The findings suggested that the children were sometimes faster and more accurate, but sometimes faster and less accurate.	This study included a between-subjects variable which was the type of task. The within-subjects variable was the presence of the dog. This study also included a control condition with no dog which helps to increase the internal validity of the findings.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Hergovich et al. (2002)	Austria	To explore the effects of the presence of a dog in the classroom on social, emotional, and behavioural measures.	46 participants: 6-7 years old	Between-subjects design with experimental and control conditions. Standardised intelligence test. Questionnaires with Likert scales for teacher ratings of pupil behaviour.	MANOVA tests for repeated measurements. Wilcoxon signed rank tests Fisher's exact test.	Significant increase in field independence and empathy with animals for the children with the dog present. Higher social integration and less aggression in the children with the dog present.	A second class of pupils acted as a control group, thus increasing the internal validity of the research. However, the lack of random assignment to experimental and control conditions reduces the internal validity. This study took place over three months which provides a longitudinal perspective to this research. This study took place in a European school with participants of multiple nationalities. This therefore increases the generalisability of these findings.
Kotrschal &	Austria	To evaluate the effects of the	24 participants: 6-7 years old	Within-subjects	Analysis of behavioural	Participants became socially	This study involved a one-month control period then one month with

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
Ortbauer (2003)		presence of dog in a classroom		design with experimental and control conditions Observations	data using focal sampling and scan sampling. Mann-Whitney U test Wilcoxon signed rank test	more homogenous. Decreased behavioural extremes (e.g., aggressiveness and hyperactivity). More withdrawn participants became more socially integrated. Participants were reported to pay more attention to the teacher.	dog. As there was no parallel, external control group, the internal validity of this research is reduced. The multi-cultural backgrounds of participants help to increase the generalisability of these findings. Many participants were identified as having language problems. This therefore reduces the generalisability of the results, as the participants were not representative of a wider population. This study was conducted with the same therapy dogs and in the same class of pupils as those from Hergovich's (2002) study, which

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
							confounds the results as pupils had already been exposed to the dog previously.
Machová et al. (2018)	Czech Republic	To explore the effect of the presence of a dog on speech therapy for children with Developmental Dysphasia	69 participants with developmental dysphasia who attended a mainstream nursery school 4-7 years old	Between-subjects design with experimental and control conditions. Standardised measures.	3-point Likert scale to analyse qualitative data from the standardised measures. Chi-square test Mann-Whitney U test	Experimental group showed significant improvements in some measures.	This study included a control group, with random assignment of participants to the experimental and control groups. This raises the internal validity of this study. Children were included if they had expressed a preference for the dog to be present and if they were happy during encounters with the dog, raising the question of whether the same positive effects would be found for children who were not as interested in the dog being present.

Reference	Country	Research Focus	Participant Characteristics	Design	Analytical Approach	Findings	Critique
							This research took place over 10 months, providing a longitudinal perspective to these findings.
Zents et al. (2017)	USA	To investigate perceptions on the effectiveness of therapy dogs in schools.	Interviews with 35 students aged 11-14 years old and 16-18 years old. 196 students completed questionnaires.	Semi-structured interviews with students, school psychologists, school counsellors and an SEN teacher. Questionnaires.	Analysis of interviews and questionnaires to identify common themes.	Students reported a close relationship with the therapy dog, feeling unconditional love or nonjudgement from the dog, that the dog helped them calm down, and reduced anxiety.	This study included pupils who were secondary school aged, providing a broader perspective about the use of dogs with an older age-group of participants. The large sample size is a strength of this research. Interviews were also conducted with school psychologists, school counsellors and a SEN teacher, and faculty members also completed the questionnaire. This provides a broader perspective for the research, in addition to that under investigation.

2.4 Identification of themes.

This systematic review identified many ways in which dogs have been found to benefit pupils through the use of dog-assisted interventions in schools. A number of different areas were highlighted in the literature as having demonstrated improvements following the introduction of dogs into the school settings. Considerations were also discussed regarding the ways in which these interventions were conducted in schools, as well as possible alternative explanations for the findings. Implications of these areas will be discussed, for schools, Local Authorities (LAs) and EPs, to help demonstrate how these interventions could have the greatest possible impact for pupils accessing them.

Three overarching themes were revealed through the thematic literature synthesis. The first theme relates to the areas in which the dog-assisted interventions were found to help (see Figure 2). The second theme encompasses the ways in which these interventions were being implemented and highlights important areas for consideration (see Figure 3). The third theme presents possible explanations for the reported outcomes (see Figure 4).

2.4.1 Theme 1: It Helps.

This theme demonstrates the variety of different areas that the use of dog-assisted interventions were found to benefit. This included areas specifically targeted by these interventions, such as reading skills, cognitive task performance, and motor skills. In addition to these areas, there were also additional benefits noted following the dog-assisted interventions, that may not have been the original areas that the interventions were intended to address. These included benefits for pupil engagement, as well as benefits for pupils' social and emotional wellbeing. This theme also considers the ways in which dog-assisted interventions have been found to benefit pupils with specific additional needs, within a mainstream provision.

Figure 2

Thematic Map of Theme 1 “It Helps”



2.4.1.1 Reading Skills.

One of the main ways identified in the previous literature in which dogs have been used to support pupils is through the use of dogs within reading interventions. Specifically, pupils were found to demonstrate significantly improved reading skills following interventions where they read to a dog (Sorin et al., 2015). In one study, 11- and 12-year-old pupils' pacing was found to be significantly better when they had read to a dog rather than a teacher and these pupils also demonstrated improved fluency and accuracy after reading to a dog (Barber & Proops, 2019). Le Roux et al. (2014) supported these findings, noting that pupils' reading accuracy improved to a greater extent after reading to a dog compared to alternative audiences. Similarly, following an intervention where 7- and 8-year-olds and 9- and 10-year olds read to a dog, pupils were found to have made greater improvements in their oral reading fluency compared to pupils who had read to peers for the intervention period (Levinson et al., 2017). Kirnan et al. (2016) also discovered more significantly

improved reading skills for 5- and 6-year old pupils who participated in a reading programme where they read to a dog, compared to a control group. These improvements in reading skills were also evident following a second year of the dog reading programme, demonstrating the continued effects of this type of intervention (Kirnan et al., 2018). However, the results from other studies have not found such improvements in reading accuracy of pupils following participation in dog-assisted reading interventions, suggesting an inconsistency in the findings from these types of interventions (Lenihan et al., 2016; Linder et al., 2018). Although mixed, these findings suggest that there may be some benefit to pupils' reading accuracy following interventions that involve reading to a dog, compared to interventions where pupils read to a teacher.

Improvements have also been demonstrated in pupils' reading comprehension following interventions involving reading to dogs, although again, these findings have been mixed in the literature. Whilst le Roux et al. (2014) demonstrated significant improvements in the reading comprehension of pupils who had read to a dog compared to pupils who had read to either a teddy bear or a teacher, the findings of Schretzmayer et al. (2017) suggested that reading to a dog had no effect on pupils' reading comprehension compared to reading to a teacher. Despite finding no improvement in reading comprehension, Schretzmayer et al. (2017) found an improvement in the repeated reading performance of pupils who had read with a dog present, but not in pupils who read in the absence of a dog, suggesting possible short-term improvements in the reading of pupils who read to a dog.

2.4.1.2 Cognitive Task Performance.

As well as specific reading skills, the literature also revealed possible benefits of dog-assisted interventions for other skills. Some findings suggest that the cognitive task performance of children may be improved by having a dog present. Gee, Gould, et al. (2012) found results to suggest that 3- to 5-year-old children were able to classify animate objects more accurately in the presence of a dog compared to when they completed this task in the presence of a stuffed toy dog or a human. Similarly, Gee, Belcher, et al. (2012) found that 3- to 5-year-old children completed an object recognition task faster and more accurately in the presence of a dog compared to in the presence of a human. Both of these findings suggest that the presence of a dog may act as an effective motivator for children and may

help children to focus their attention more effectively on a task (Gee, Belcher, et al., 2012; Gee, Gould, et al., 2012).

2.4.1.3 Motor Skills.

Some studies have also suggested that the motor skills of children may be improved by the presence of a dog. Gee et al. (2007) found that children performed some motor tasks faster and without compromising accuracy in the presence of a dog compared to when the same tasks were performed in the absence of a dog. These findings may further suggest the possible effect of the dog as a motivator for children.

In a study where dogs were included in speech therapy for children with developmental dysphasia, there were statistically significant improvements in a number of associated motor skills compared to children who had received conventional speech therapy in the absence of the dog (Machová et al., 2018). Assessed skills, such as narrowing and shutting of the eyes and filling up the cheeks with air, were found to be significantly better when children had received speech therapy with a dog present, suggesting that the effects of speech therapy could be enhanced by the inclusion of a therapy dog. One possible explanation for these findings could be that a dog acts to motivate children and this therefore results in more significant improvements following an intervention. Additionally, Machová et al. (2018) noted that the children appeared to communicate more openly with the therapist when the dog was present, suggesting that the addition of a therapy dog may also benefit social communication and may encourage openness amongst children.

2.4.1.4 Engagement.

One of the other main effects presented in the previous literature surrounding the use of dogs in education is the impact this has on pupils' engagement. A number of studies found that students reported experiencing more positive emotions following involvement in an intervention where a dog was present (Bassette & Taber-Doughty, 2013; Rousseau & Tardif-Williams, 2019; Zents et al., 2017).

Furthermore, several studies investigating the effects of a reading dog found that pupils appeared more motivated and demonstrated more persistence during and after these interventions (Barber & Proops, 2019; Bassette & Taber-Doughty, 2013; Kirnan et al., 2016, 2020; Rousseau & Tardif-Williams, 2019; Sorin et al., 2015). This increased motivation of children in the presence of a dog was also reported following investigations into the object recognition and object classification performance of children in pre-school (Gee, Belcher, et al., 2012; Gee, Gould, et al., 2012; Gee et al., 2007). Gee et al. (2007) also reported greater motivation in children completing various motor skills tasks in the presence of a dog.

Effects have also been reported to suggest that students' confidence can be increased by the inclusion of therapy dogs within interventions, specifically with regard to confidence in reading (Barber & Proops, 2019; Kirnan et al., 2016, 2020; Rousseau & Tardif-Williams, 2019; Sorin et al., 2015; Zents et al., 2017). Similarly, students often reported feeling less self-conscious, and happier to read aloud, in the presence of a dog (Barber & Proops, 2019; Bassette & Taber-Doughty, 2013).

With respect to attitudes towards reading, some findings suggest that attitudes towards academic reading may significantly increase for pupils who read to a dog (Linder et al., 2018). However, other findings suggest that whilst there may be no significant change in attitudes towards academic reading for pupils who read to a dog, these attitudes may be significantly decreased in pupils who did not read to a dog (Lenihan et al., 2016).

Furthermore, attitudes towards recreational reading were found not to change significantly for pupils who read to a dog, nor for pupils who did not read to a dog (Lenihan et al., 2016; Linder et al., 2018). These findings suggest that these types of dog-assisted interventions may have specific effects on certain attitudes towards reading in particular settings, and therefore may be especially beneficial for use with pupils who are found to have negative attitudes towards reading in school. When considering general attitudes towards reading, some findings have suggested that pupils may show increased interest in reading following an intervention where they have read to a dog, particularly if they have previously struggled with reading (Kirnan et al., 2016). Conversely, other research has reported that there were no significant effects on general attitudes towards reading in children who read to a dog, compared to children who read to their peers (Levinson et al., 2017). Similarly, some

findings have indicated that general attitudes towards reading did not change significantly following an intervention where pupils read to a therapy dog compared to when pupils read to a teacher (Barber & Proops, 2019). It is important to note, however, that the individuals in Barber and Proops' (2019) study were secondary school-aged pupils, as this may indicate that attitudes towards reading are less likely to change following a dog-assisted reading intervention with older pupils, compared to a similar type of intervention with younger children.

2.4.1.5 Social and Emotional Wellbeing.

The previous literature also highlighted some key effects of dog-assisted interventions in a number of areas of pupils' social and emotional wellbeing. Some studies revealed results to suggest that the attendance of pupils could be improved through the use of dog-assisted reading interventions (Sorin et al., 2015). However, this effect was not specific to dog-assisted reading interventions, as pupil attendance was also found to be improved following school visits from therapy dogs when these dogs had wide ranging uses, from counselling to classroom visits (Zents et al., 2017). Furthermore, the drop-out rates for reading interventions were found to be lower when they involved a therapy-dog compared to when they did not (Lenihan et al., 2016).

The previous research also revealed a number of significant impacts on pupils' relationships following participation in dog-assisted interventions. A number of studies suggested that pupils' relationships with their peers improved following involvement in a dog-assisted reading intervention (Kirnan et al., 2020; Sorin et al., 2015). These findings suggest that there may be far wider-reaching impacts of these types of interventions than simply to improve the reading skills of the pupils involved. Furthermore, pupils' relationships with their peers were also found to be improved by the presence of a dog in their classroom, with researchers reporting less aggression and improved social integration in these pupils, suggesting that there may also be social and emotional benefits that arise from the presence of dogs within classrooms (Hergovich et al., 2002; Kotrschal & Ortbauer, 2003; Zents et al., 2017). Additionally, pupils who had a dog present in their classroom were found to demonstrate greater empathy compared to a control group of pupils who did not have a dog present in their classroom (Hergovich et al., 2002).

Not only were pupils' relationships with their peers proposed to be improved following dog-assisted activities, but it is also reported that pupils' relationships with their teachers improved, with findings suggesting that teachers were better able to recognise their pupils' difficulties following an intervention where pupils participated in activities with a dog present (Correale et al., 2017). In addition, when dogs were present at speech therapy sessions, children appeared to be more open to communicating with their speech therapist, suggesting that the relationships between children and therapists may also be enhanced by the presence of a dog (Machová et al., 2018).

Some studies have also suggested that children may demonstrate more on-task behaviour in the presence of therapy dogs. During dog-assisted reading interventions, pupils were reported to show more on-task behaviours, suggesting that they remained more focused on the reading task during the intervention when dogs were present (Bassette & Taber-Doughty, 2013; Kirnan et al., 2016, 2020). Interestingly, these effects were also noted during the time preceding the dog's presence, as well as during the time that the dog was present (Kirnan et al., 2020), suggesting that the beneficial impact on pupils' ability to remain focused and on-task may possibly be extended to times other than when the dog is actually present. Additionally, it was suggested that children were better able to focus their attention in order to complete a categorisation task more successfully in the presence of a dog, compared to when a dog was absent (Gee, Gould, et al., 2012). However, other studies have suggested that the presence of a dog has no effect on the on-task behaviour of pupils (Kirnan et al., 2016; Kotrschal & Ortbauer, 2003; Schretzmayer et al., 2017), which casts some doubt over the assertion that the presence of a dog may act to increase the focus or attention of children during particular tasks.

A number of studies have reported calming effects of the presence of a dog in educational settings. During dog-assisted reading interventions, pupils' behaviour was reported to be calmer and more relaxed in the presence of a dog compared to when the dog was absent (Kirnan et al., 2016, 2020; Schretzmayer et al., 2017). Pupils themselves also identified that they felt calmer or more relaxed when therapy dogs were present (Barber & Proops, 2019; Zents et al., 2017). However, when physiological measures were considered, these indicated that there was no impact on pupils' heart rate and heart rate variability when a therapy dog

was present (Schretzmayer et al., 2017). This indicates that the self-reported calming effects of the presence of the dog may simply have been perceived by the participants, but without any physiological basis to confirm these. Furthermore, there are also findings to suggest that certain physiological measures may actually have been greater when the therapy dogs were present. Levels of cortisol, indicating arousal levels, were higher in pupils who read in the presence of a dog, compared to pupils who read without a dog present (Schretzmayer et al., 2017). This suggests that the presence of a dog may sometimes not have a physiological calming effect on pupils, despite the perceived calming effect reported.

Previous literature has also highlighted a reduction in negative behaviours of pupils in conditions where a therapy dog was present. A number of studies reported less aggression in pupils when a therapy dog was present (Hergovich et al., 2002; Kotrschal & Ortbauer, 2003; Zents et al., 2017), and some findings also suggested that pupils demonstrated fewer behavioural extremes in the presence of a therapy dog (Kotrschal & Ortbauer, 2003). Other studies reported a reduction of behavioural referrals when a therapy dog was present (Zents et al., 2017).

There are findings to suggest that there may also be specific social and emotional benefits to the inclusion of a therapy dog within educational settings. Some studies have reported that both the expression of emotions, as well as the recognition of emotions, was improved in pupils when a therapy dog was present (Correale et al., 2017; Dicé et al., 2017).

2.4.1.6 Specific Additional Learning Needs.

AAIs have been implemented with children and young people with a variety of different specific additional learning needs (ALN), with a number of positive effects reported. Some findings have suggested that there may be benefits of AAI for pupils with emotional and behavioural difficulties (EBD). When a dog-assisted reading programme was implemented with children with EBD, their academic engagement behaviour was notably improved following the intervention (Bassette & Taber-Doughty, 2013). The behaviour of a pupil described as having behavioural issues was also reported to have significantly improved following the implementation of a dog-assisted reading programme (Kirnan et al., 2020). However, the findings from this study were mixed, as pupils with additional types of ALN

described as learning disorders did not demonstrate the same behavioural improvements following the AAI, with one student even reported as displaying more positive behaviours on the days that the dogs were absent (Kirnan et al., 2020). This therefore suggests that there may be specific benefits of AAI for individuals with behavioural needs but without any additional learning need. On the other hand, individuals with both educational and emotional needs showed significant improvements in their reading skills, and experienced more positive emotions, when they read to a dog compared to when they read to a teacher (Barber & Proops, 2019). This indicates that there may be specific emotional benefits for pupils experiencing both emotional needs and additional learning needs following the implementation of dog-assisted reading interventions.

The presence of a therapy dog within a school setting was also reported to be particularly beneficial for students with social, emotional and behavioural needs and was suggested to successfully contribute towards the improved psychological well-being of these pupils. Specifically, it was reported that after including a therapy dog in counselling sessions, the number of behaviour referrals for one pupil was significantly reduced (Zents et al., 2017).

When considering the impact of dog-assisted reading programmes, there are some findings to suggest that the significance of the improvements observed may vary depending on the initial reading level of the individuals involved. It was suggested that pupils with below-average reading ability showed more significant improvements in their reading performance (Kirnan et al., 2016; le Roux et al., 2014; Schretzmayer et al., 2017). However, similar improvements in reading skills were not observed following the implementation of a dog-assisted reading programme with pupils who were identified as having average reading ability (Linder et al., 2018). These findings suggest that dog-assisted reading interventions may be most effective when used with pupils with recognised reading difficulties.

Similarly, specific benefits of dog-assisted reading programmes have been reported for children who have English as a Second Language (ESL) and for children defined as English Language Learners (ELL) (Kirnan et al., 2016, 2018). As it seems likely that pupils for which English is not their first language would have lower than average reading skills, these findings appear to confirm the suggestion that dog-assisted reading programmes lead to

more significant gains in reading performance for individuals with below-average reading ability.

Speech disorders have also been suggested as another type of ALN that AAls may be particularly successful in helping to address. Following a dog-assisted reading programme, both teachers and dog handlers reported that pupils with speech disorders appeared to benefit notably from the intervention (Kirnan et al., 2016). Furthermore, the inclusion of a dog within speech therapy sessions was demonstrated to lead to more significant improvements compared to traditional speech therapy sessions conducted without a dog being present (Machová et al., 2018).

There has also been a suggestion within the literature that the presence of a dog within educational settings may be beneficial for pupils with selective mutism. In one study, a dog was used within an intervention for a non-verbal pupil experiencing selective mutism, to support and promote the pupil's verbal communication (Zents et al., 2017). Significant improvements were demonstrated as a result of this intervention, which also extended to an increase in verbal communication outside of the therapeutic environment. These findings suggest that the presence of dogs within educational settings may be beneficial for individuals with a variety of different, specific educational needs.

Benefits of the inclusion of dogs within educational settings have also been demonstrated for individuals with ASD. When a dog was present in counselling sessions for a pupil with ASD, the individual demonstrated significant increases in communication and an improved ability to form positive relationships with others, including the counsellor, teachers and other pupils (Zents et al., 2017).

2.4.2 Theme 2: How It's Done.

This theme highlights two important factors for consideration when implementing dog-assisted interventions within a school environment. The first is the age of pupils, as it has been suggested that the benefits that arise from these interventions are more significant for particular age-groups of children. The second factor concerns the importance of selecting

dogs for these interventions who have received appropriate training and assessment, to ensure their suitability for use within a school setting.

Figure 3

Thematic Map of Theme 2 “How it’s done”



2.4.2.1 Age of Pupils.

Some of the previous literature surrounding the use of animals within educational settings has highlighted the positive effects that may occur for pupils of different ages. A number of studies have identified that the inclusion of a dog within reading interventions may be more effective in improving reading ability for younger pupils. In one study where Primary school-aged pupils read in the presence of a dog, pupils in the younger year groups made more significant improvements in their reading skills compared to older pupils (Levinson et al., 2017). Similar benefits were revealed for 5- to 6-year-old pupils who read in the presence of a dog, whereas older pupils did not demonstrate the same improvements in reading skills (Kirnan et al., 2016). A follow-up study further confirmed these findings and also revealed significant improvements in the reading ability of 6- to 7-year old pupils, but not for older pupils (Kirnan et al., 2018).

2.4.2.2 Trained and Tested Dogs.

One of the highlighted key factors to consider before introducing a dog to the school environment is the level of training they have received. As a result, many of the dogs that were utilised for these studies were acquired from specialist organisations and were registered therapy dogs. This helped to ensure that all aspects of their temperament, behaviour and physical health had been tested, and also provided additional insurance cover through the organisation (Kirnan et al., 2016).

Some of the dogs used in the existing literature were recruited through a particular organisation called Pet Partners (formerly The Delta Society) (Bassette & Taber-Doughty, 2013; Lenihan et al., 2016; Sorin et al., 2015). This ensured that the dogs had been sufficiently trained, as they had been assessed to determine their level of competency with basic skills, such as sit and stay, as well as tested to ensure that they displayed appropriate behaviour within different environments (Bassette & Taber-Doughty, 2013). Additionally, the dogs introduced to the schools were tested to ensure that they were in good health and free from disease (Lenihan et al., 2016).

Another organisation that was used to recruit dogs for use in these studies was Pets as Therapy (le Roux et al., 2014; Barber & Proops, 2019). This ensured that the dogs had been assessed and were registered as therapy dogs. These dogs were familiar with visiting different environments.

Therapy Dogs United was another organisation reported to be used to recruit dogs for use in schools in the literature. These dogs were required to pass a specific assessment in addition to a basic skills test and were also health checked (Levinson et al., 2017).

A variety of different dog breeds have been utilised in the existing literature, including an Australian Shepherd (Schretzmayer et al., 2017), a Bernese Mountain Dog (Rousseau & Tardif-Williams, 2019), a Border Collie (Gee, Belcher, et al., 2012), a Boxer (le Roux et al., 2014), an English Setter (Correale et al., 2017), a Golden Labrador (Zents et al., 2017), Golden Retrievers (Bassette & Taber-Doughty, 2013; Hergovich et al., 2002; Kotrschal & Ortbauer, 2003; le Roux et al., 2014; Zents et al., 2017), Greyhounds (Bassette & Taber-

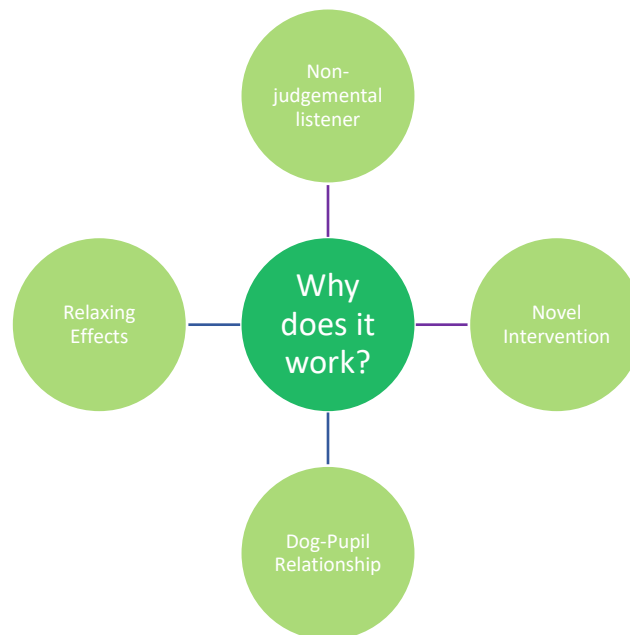
Doughty, 2013; Lenihan et al., 2016), Jack Russell Terriers (le Roux et al., 2014; Lenihan et al., 2016), a Jack Russel-Poodle crossbreed (Barber & Proops, 2019), a King Charles Cavalier (le Roux et al., 2014), a Maltese (le Roux et al., 2014) a Maltese-Yorkshire Terrier crossbreed (Rousseau & Tardif-Williams, 2019), a Miniature Pinscher (Correale et al., 2017), a Newfoundland (Lenihan et al., 2016), a Peruvian Hairless Dog (Machová et al., 2018), Poodles (Gee et al., 2007; Gee, Gould, et al., 2012; Schretzmayer et al., 2017), a Shih Tzu (Lenihan et al., 2016), Siberian Huskies (Hergovich et al., 2002; Kotrschal & Ortbauer, 2003; Lenihan et al., 2016), a Staffordshire Bull Terrier (Schretzmayer et al., 2017), a Staffordshire Bull Terrier-German Shepherd crossbreed (Schretzmayer et al., 2017), an unspecified crossbreed (Hergovich et al., 2002; Kotrschal & Ortbauer, 2003) and a Weimaraner (le Roux et al., 2014). This demonstrates that there is not one specific breed of dog that has been found to be most suitable for these types of interventions.

2.4.3 Theme 3: Why does it work?

Although not within the direct scope of this review to explore an explanation for the benefits reported following the dog-assisted interventions, this third theme encompasses some of the main points raised in the literature regarding possible alternative explanations for the results observed in the studies, that are important to note. These explanations include the dog as a non-judgemental listener, a novelty effect of the dog-assisted interventions, the impact of the relationships formed between pupils and the dogs, and the relaxing effects that arise from the presence of the dog.

Figure 4

Thematic map of Theme 3 “Why does it work?”



2.4.3.1 Non-Judgemental Listener.

When considering the use of dogs to improve pupils’ reading skills, the general rationale predominately relates to reading as an anxiety-inducing experience for pupils. Therefore the inclusion of a dog in this environment acts to provide a non-judgemental listener for pupils, and this can help alleviate some of this anxiety (Kirnan et al., 2018). It is suggested in the reviewed literature that the unconditional acceptance of pupils by therapy dogs allowed the pupils to feel comfortable reading out loud, as they were not fearful of making mistakes (le Roux et al., 2014).

2.4.3.2 Novel Intervention.

When considering possible explanations for the findings presented in these studies, one of the key alternatives considered is the way in which the dog-assisted interventions act as a novel intervention. It has been suggested that the novelty of the interventions attracted the attention of pupils or may have provided them with a break from their normal activities (Barber & Proops, 2019; Kirnan et al., 2016). Studies conducted on a short-term basis often

discussed the possibility of a novelty effect as an alternative explanation for the benefits reported (Kirnan et al., 2016; Levinson et al., 2017; Rousseau & Tardif-Williams, 2019; Schretzmayer et al., 2017). However, studies that demonstrated a sustained benefit over a longer intervention period provide evidence to suggest that the improvements observed extend beyond the novelty of the intervention (Kirnan et al., 2018).

2.4.3.3 Dog-Pupil Relationship.

Additional explanations for the benefits observed in these studies were also suggested to include the relationship formed between the pupils and the dogs within these interventions (Barber & Proops, 2019; Bassette & Taber-Doughty, 2013). Some studies suggested that greater benefits were observed in the outcome measure when pupils had developed a stronger relationship with the dog involved in the intervention (Bassette & Taber-Doughty, 2013; Rousseau & Tardif-Williams, 2019). Other studies referred to the attachment relationship that had developed between pupils and the dog and suggested that the unconditional positive regard that pupils experienced as a result of working with the dog may have been a contributing factor towards the results observed (Zents et al., 2017).

2.4.3.4 Relaxing Effects.

Furthermore, some studies have suggested that the relaxing effects of physically interacting with a dog could help to offer an explanation for the benefits observed (Barber & Proops, 2019; le Roux et al., 2014; Rousseau & Tardif-Williams, 2019). Other studies have suggested that the mere presence of the dog within the environment helped pupils to feel more relaxed and less stressed (Gee et al., 2007).

3. Discussion

This systematic review of the literature has aimed to provide an international perspective to illustrate how dogs have been used in mainstream schools to support pupils. The reviewed studies offer a broad insight into the variety of uses of dogs in schools throughout the world and demonstrate a number of beneficial outcomes for pupils in a range of areas, many of

which extend beyond the primary focus of the intervention. These findings have significant implications for schools, as well as for LAs and policymakers in the UK.

3.1 Implications for Practice.

This review highlights a number of implications for practice. For schools, the literature demonstrates a wide range of possible uses for dogs within education settings. Whilst there may be a strong emphasis on ‘reading dogs’ in the literature and an existing awareness of how dogs can contribute towards pupils’ enjoyment of reading, as well as their reading ability, this review demonstrates possible additional uses of dogs in schools. Schools utilising ‘reading dogs’ could therefore consider extending the ways in which these animals are utilised to maximise the potential for pupils to benefit. This review also suggests how pupils can often benefit in ways that extend beyond the key areas targeted by the interventions. Schools could therefore consider using dog-assisted interventions as a cost-effective approach to achieving improved outcomes in a number of different areas.

3.2 Implications for LAs.

One of the implications which this review highlights for LAs concerns the importance of sufficient consideration being given to the ways in which these types of interventions are being used in schools. The importance of dogs having received appropriate training and assessment is also highlighted within the literature, and therefore it is important for LAs to consider the policies that are in place to formalise the requirements for appropriate training and assessment of dogs before they are able to be introduced into school settings. This is essential for the safeguarding of pupils and staff in schools, and also to ensure the welfare of the animals involved.

Research Rationale

The literature review has provided an insight into the ways in which dogs have been utilised internationally within specific interventions but has revealed a distinct lack of literature focused on the use of dogs in mainstream schools in the UK. In addition, similar to the findings from the narrative review, the systematic review has revealed an emphasis on the use of dogs to support pupils with reading, with no clear rationale or explanation for how

this area of the curriculum was chosen in preference to other anxiety-provoking areas of the curriculum. In the literature reviewed, there is a lack of consideration given to how dog-assisted interventions could benefit pupils in other areas of the curriculum that may be equally anxiety-inducing, such as mathematics (Hill et al., 2016; Petronzi et al., 2019), and there is little in the existing literature to suggest why reading is being uniquely targeted with dog-assisted interventions. In the literature reviewed, there is also often little detail provided about how the dog is included within the interventions implemented, and precisely what interactions pupils engage in with the dog. This makes replication of these studies difficult.

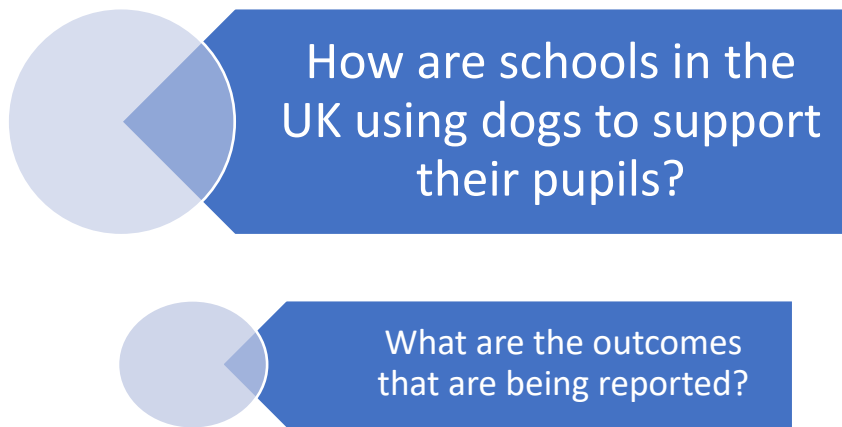
There is a clear and identified gap in the existing literature which leaves the landscape of dog-assisted interventions in mainstream schools in the UK somewhat unclear. Further research would therefore be beneficial, not only to explore the different ways in which schools in the UK are using dogs to support their pupils, but also to investigate the range of outcomes that these schools are identifying. It is important to establish whether there is a similar emphasis on dogs supporting pupils with reading in the UK, as has been evidenced internationally, or whether dogs are being utilised to support pupils in a wider range of areas.

Research Questions

The current study aims to address the identified gap in the existing literature by exploring the different ways in which mainstream primary and secondary schools in the UK are using dogs to support their pupils. This research is guided by the following overarching research question, with a further subsidiary question (see Figure 5).

Figure 5

Research Questions



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“I've seen first-hand the difference that it's made to these children's lives”:

An exploration of the use of dogs in six schools in England and Wales.

Part 2: Empirical Research Paper

Word Count: 7648

1. Abstract

The therapeutic use of animals has been shown to lead to a variety of positive outcomes in both health and education settings. There appears to be a growing trend of dog-assisted interventions being used in schools, with progressively more schools being seen to be introducing dogs to their settings. Whilst there has been some research internationally into the potential benefits of dogs in schools, there is a dearth of literature specifically focused on the use of dogs in schools in the UK.

This study aimed to investigate the use of dogs in mainstream education settings within the UK, in order to examine the outcomes reported for pupils. A questionnaire was circulated nationally which identified schools currently implementing dog-assisted interventions, and subsequently six semi-structured interviews were undertaken with professionals from mainstream Primary and Secondary Schools in the UK. Data was analysed using thematic analysis and revealed five overarching themes. Participants reported a variety of different foci for the dog-assisted interventions, with a number of benefits being identified.

Participants also revealed different points for consideration when introducing a dog to the school environment. These findings help to illustrate how dog-assisted interventions are being implemented in schools in the UK and suggest a wide range of possible uses for the benefit of both pupils and staff. Implications for practice are considered, with EPs being well-placed in their role to support at the individual, group, and systemic levels.

2. Introduction

2.1 Psychological Theories

The literature examining the use of animal-assisted interventions has drawn on different theories from psychology to suggest how animals may act in a variety of ways to bring about positive results for those involved. Ideas based on attachment theory suggest that the bonds that form between therapy animals and human participants may lead to various beneficial outcomes (Kruger & Serpell, 2010). Rogers (1957) demonstrated the importance of unconditional positive regard, particularly in therapeutic settings. As animals are often viewed as offering unconditional love, and as responding to individuals in a non-

judgemental way (Kruger & Serpell, 2010), this provides an additional explanation for some of the benefits of many types of animal-assisted intervention. Animals may act as social mediators, thus helping to strengthen relationships between individuals (Kruger & Serpell, 2010). The use of animals within interventions can therefore have a social facilitation effect. The biophilia hypothesis (Wilson, 1984) helps to explain how friendly, calm animals can have a calming effect on humans, offering a further explanation for many of the benefits observed when animals are included within interventions. Interactions between animals and humans can also increase levels of the hormone oxytocin (Handlin et al., 2011), which is associated with a number of positive physiological, psychological and social effects, including a reduction in heart rate, blood pressure and cortisol levels, as well as a reduction in depression and anxiety, and an increase in social interactions (Li et al., 2019; Petersson, 2002; Uvnäs-Moberg, 2003). Ideas from learning theory suggest that the use of animals within interventions can help to direct a participant's attention away from anxiety-inducing stimuli (Brickel, 1982), and can therefore help to reduce the levels of arousal and anxiety experienced by participants. There is also a suggestion that the inclusion of animals within interventions can help to promote cognitive and behavioural changes for the individuals involved (Kruger & Serpell, 2010). For example, appropriate social behaviours can be learnt and reinforced through the interactions that take place between the therapy animals and participants, and participants may make modifications to their behaviours in order to assume a particular role within the interventions.

2.2 Therapeutic Uses of Animals

Animals have therefore been utilised in a range of capacities to provide therapeutic support within Animal Assisted Interventions (AAIs). Dogs in particular are frequently chosen as they are the most common companion animal and display behaviours that are typically interpreted as happy, friendly and affectionate (Lundqvist et al., 2017). As a result, dogs have been introduced into school settings and have been found to be particularly effective for use in specific interventions with a reading focus. The Reading Education Assistance Dogs (READ) programme, developed by Intermountain Therapy Animals in America in 1999, was the first official programme to promote children reading to dogs (Hall et al., 2016). Similar programmes have been developed by charities in the UK, including Dogs for Good,

Pets As Therapy and Therapy Dogs Nationwide, with the aim of addressing literacy problems by helping children to develop a love of reading through reading to a specially trained support dog (The Kennel Club, 2011). Although reading programmes appear to be one of the more commonly used AAI in schools, there is some recognition of how dogs could also be used to help target additional curriculum areas, such as pupils' social, personal, and numeracy skills (Therapy Dogs Nationwide, 2021).

One of the additional ways in which dogs have been used to support pupils in education settings is through the school adopting a resident school dog. Respected historian and educator Sir Anthony Seldon suggested that every school in the UK could benefit from having a school dog and is quoted as stating that this was a cost-effective approach that could impact upon pupil wellbeing by improving pupils' feelings of security at school (Coughlan, 2019). Former Education Secretary Damian Hinds also noted that an increasing number of schools have wellbeing dogs and proposed that these have a significant impact for pupils (Coughlan, 2019). It has been suggested that school dogs can have a range of positive effects for pupils, including acting as a calming influence and providing comfort for pupils, as well as supporting reluctant or anxious pupils to attend school (Craggs Mersinoglu, 2019).

2.3 International Perspective of the Use of Dogs in Schools

A systematic review of the literature into the international use of dogs in mainstream educational settings (see Part 1b) identified a range of ways in which dogs have been found to benefit pupils, in areas such as reading skills (Barber & Proops, 2019; Kirnan et al., 2016, 2018; le Roux et al., 2014; Levinson et al., 2017), cognitive task performance (Gee, Belcher, et al., 2012; Gee, Gould, et al., 2012), and motor skills (Gee et al., 2007; Machová et al., 2018). Additional unanticipated outcomes were also noted including benefits for pupils' engagement (Barber & Proops, 2019; Bassette & Taber-Doughty, 2013; Kirnan et al., 2016, 2020; Rousseau & Tardif-Williams, 2019; Sorin et al., 2015), pupils' social functioning (Hergovich et al., 2002; Kirnan et al., 2020; Kotrschal & Ortbauer, 2003; Sorin et al., 2015; Zents et al., 2017) and pupils' emotional wellbeing (Bassette & Taber-Doughty, 2013;

Rousseau & Tardif-Williams, 2019; Zents et al., 2017). The literature review also highlighted important factors for consideration when implementing dog-assisted interventions within a school environment, including the age of pupils involved (Kirnan et al., 2016, 2018; Levinson et al., 2017), as well as the importance of selecting dogs who have received appropriate training and assessment (Barber & Proops, 2019; Bassette & Taber-Doughty, 2013; Kirnan et al., 2016; le Roux et al., 2014; Lenihan et al., 2016; Sorin et al., 2015), to ensure their suitability for use within a school setting. A number of potential theories were offered as an attempt to explain the positive outcomes observed from the AAI, including the dog acting as a non-judgemental listener (Kirnan et al., 2018; le Roux et al., 2014), a novelty effect of the dog-assisted interventions (Barber & Proops, 2019; Kirnan et al., 2016; Levinson et al., 2017; Rousseau & Tardif-Williams, 2019; Schretzmayer et al., 2017), the impact of the relationships formed between pupils and the dogs (Barber & Proops, 2019; Bassette & Taber-Doughty, 2013; Rousseau & Tardif-Williams, 2019; Zents et al., 2017), and the relaxing effects that arise from the presence of the dog (Barber & Proops, 2019; Gee et al., 2007; le Roux et al., 2014; Rousseau & Tardif-Williams, 2019).

2.4 Current Context

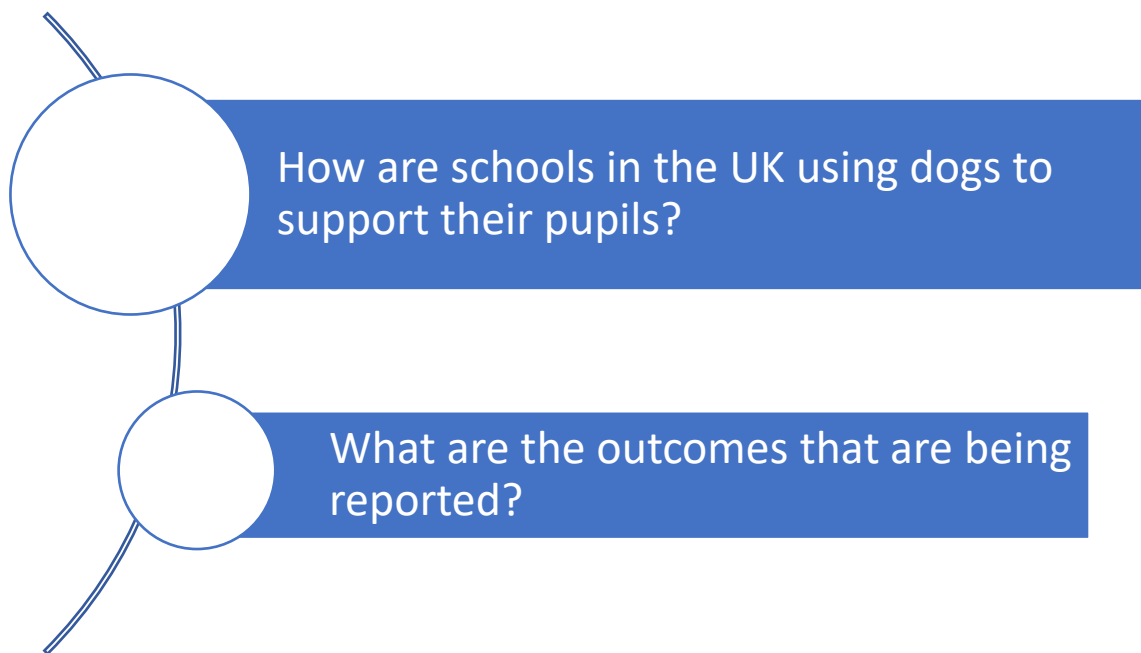
Despite the increasingly more widespread use of dogs in schools, there is a lack of documented statistics to record the number of schools in the UK that are using dogs to support pupils, and the Department for Education (DfE) provides no information to detail the number of schools that are currently implementing dog-assisted interventions (Massey, 2019). There is also no official requirement from the DfE for schools to register or train the dogs that are used in AAI (Massey, 2019). More notably, there is an identified dearth of literature specifically focused on the use of dogs in mainstream education settings in the UK. As a result, the landscape of the use of dogs in schools in the UK remains somewhat unclear. It is important within the EP role to have a clear, up-to-date understanding of the types of interventions that are being used to support pupils within schools, and EPs may play an important role in helping schools to consider how to maximise the potential of either resident school dogs, or the AAIs being implemented. Further research would therefore be beneficial, to explore the different ways in which schools in the UK are using dogs to support their pupils, as well as the range of outcomes that these schools are identifying.

2.5 Rationale for Current Study

The current study aims to explore the different ways in which schools in the UK are using dogs to support their pupils. This research is guided by the following overarching research question, with a further subsidiary question (Figure 6).

Figure 6

Research Questions



3. Methodology

3.1 Ontology and Epistemology

The ontological position of this research takes a critical realist stance, with knowledge viewed as being socially influenced (Braun & Clarke, 2013). This position proposes that an 'underlying truth' exists, but that this truth is ultimately dependent on the subjectivity of participants (Bhaskar, 1975). In this way, the 'underlying truth' could be revealed to some

degree by the current study, but through the subjective lens of the participants which would be influenced by many contextual factors specific to each individual.

The epistemological standpoint of this research is that of contextualism. This position sees knowledge as emerging from contexts and therefore recognises that participants' truths are unavoidably shaped by their context (Braun & Clarke, 2013). As no single method can get to 'the truth', it was felt that it would be most meaningful to listen to the contextual truths of participants and explore the knowledge that the semi-structured interviews would reveal about the use of dogs in schools, through the lens of the professionals working in the schools.

3.2 Design

This study took place in two parts: an initial questionnaire (recruitment phase) and semi-structured interviews (phase 2). In line with the ontological and epistemological stance of this research, a qualitative design was adopted for Phase 2 of the study, with an initial mixed-methods questionnaire first used to identify and recruit participants for inclusion in Phase 2.

Recruitment Strategy: The questionnaire was developed online using Qualtrics^{XM} software and included 42 questions. Depending on the answers given, participants were directed through the questionnaire to complete a minimum of 9 questions and a maximum of 20 questions.

The aim of the questionnaire was to gather initial information about the use of animal-assisted interventions in schools across the UK, in order to identify and recruit appropriate participants for Phase 2 of the study.

Phase 2: Semi-structured interviews were undertaken using a secure Microsoft Teams account with 6 staff members from schools across England and Wales who were currently using dogs to support their pupils, as identified in the recruitment phase. The aim of the interviews was to gather an in-depth understanding of the types of dog-assisted interventions that were being used in these schools and the outcomes that were being

observed for pupils. Semi-structured interviews were chosen as the most appropriate methodology for this study, rather than an alternative methodology such as focus groups, as it allowed for detailed data to be gathered about each individual participant's experiences and perspectives (Braun & Clarke, 2013). Due to the Covid-19 pandemic and associated government guidance regarding social distancing, it was necessary for these interviews to take place online, using a secure Microsoft Teams account. Although some types of virtual interviews have previously been regarded as less favourable alternatives to in-person interviews (Braun & Clarke, 2013), in the current study there were a number of unanticipated advantages that came about as a result of the interviews being conducted virtually. These included being able to recruit participants from a range of geographical areas within the UK, as well as the interviews being arranged at more convenient times and locations for participants than face-to-face interviews would have afforded.

3.3 Participants and Recruitment

Recruitment Strategy: The questionnaire was shared nationally with participants using online, UK-wide SENCo/ALNCo forums and groups. A message was posted on three online SENCo/ALNCo forums and groups to explain the purpose of the study and included a link for participants to follow to access the questionnaire online. 52 participants completed the questionnaire from schools across the UK, including North West England (5), Yorkshire and the Humber (2), the West Midlands (7), the East Midlands (8), South West England (5), South East England (9), the East of England (3), Greater London (5) and Wales (3). 5 participants did not complete this question to indicate the location of their school. Although the questionnaire was posted on SENCo/ALNCo forums and groups, participants completing the questionnaire indicated that they had a variety of roles, including ALNCo/SEnCo (26), dual role ALNCo/SEnCo and Assistant Headteacher (11), Headteacher (4), SEN teacher (2), Welfare Officer (1), Training Operations Manager (1), SEN Consultant (1), Aspiring SENCo (1) and SENCo/parent (1). 4 participants did not complete this question to indicate their role. 26 of the participants who completed the questionnaire indicated that they worked in State Primary Schools (one identifying from a State Junior School), with other participants selecting Special School (8), State Secondary School (5), Academy (3), Independent Special School (2), Pupil Referral Unit (1), Independent Primary School (1), Independent Secondary

School (1), Independent 4-18 School (1), Nursery/Pre-School (1), High COIN centre within a school (1) and Training Provider (1), and one participant indicated that they worked across many schools. If participants' responses indicated that their school was currently using a dog to support pupils, they were informed that they may be eligible for Phase 2 of the study and were able to enter their email address within the questionnaire.

Phase 2: Participants were eligible for inclusion in Phase 2 of the study if their responses indicated that they were currently using a dog to support pupils in a mainstream Primary or Secondary school. Eligible participants had the option to provide their email address at the end of the questionnaire, if they were happy to be contacted to be invited to participate in the second phase of the study. Purposive sampling (Smith, 2003) was used to select participants for Phase 2 following the detailed consideration of the responses of the 12 eligible participants who had provided their email address in the recruitment phase. The types of interventions in place in these schools, and the needs described by participants, were considered to ensure a variety could be investigated further in Phase 2. Six participants were recruited for inclusion in the semi-structured interviews. This included participants from 5 Primary schools and 1 Secondary school, to reflect the 5:1 ratio of Primary to Secondary schools within the questionnaire respondents. All participants worked in schools in different LAs, from regions throughout England and Wales including the West Midlands (2), East Midlands (1), South West England (1) and Wales (2). Three of the participants were Headteachers, two were ALNCoS/SENCoS, and one was a Welfare Officer. Five worked in mainstream State Primary Schools and one was recruited from a mainstream State Secondary School. Additional details about each participant are included in Table 4 below.

Table 4

Demographic Information About Selected Participants

Participant	School Type	Location	Role	Resident School Dog (Y/N)	Owner of Dog
1	Primary	East Midlands	SENCo	N	Individual related to member of specialist teaching staff
2	Primary	West Midlands	Headteacher	Y	Headteacher
3	Primary	West Midlands	Headteacher	Y	Member of teaching staff
4	Secondary	Wales	Welfare Officer	N	External Intervention Programme
5	Primary	Wales	ALNCo	Y	Headteacher
6	Primary	South-West England	Headteacher	Y	Headteacher

3.4 Inclusion and Exclusion Criteria

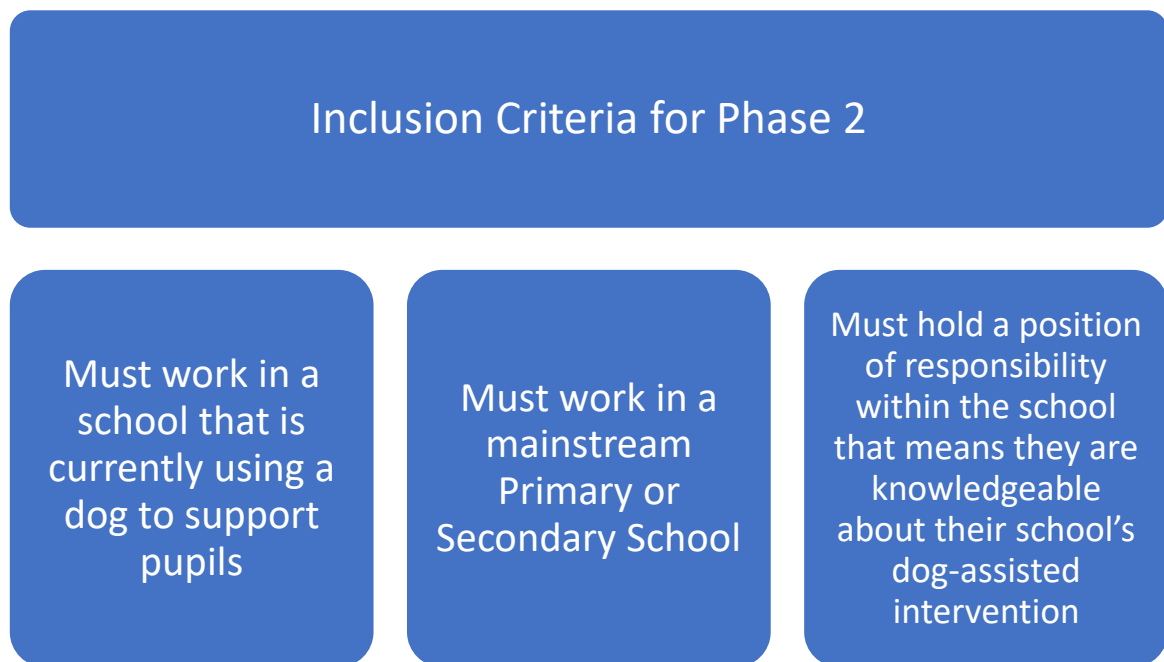
Recruitment Strategy: All of the professionals who were signed up to the online SENCo/ALNCo forums and groups were invited to complete the questionnaire and could access a post with a link to the questionnaire.

Phase 2: Participants were invited to take part in the semi-structured interviews if their responses to the questionnaire in the recruitment phase indicated that their school was

currently using a dog in some way to support pupils. The full inclusion criteria for Phase 2 are presented below in Figure 7.

Figure 7

Inclusion Criteria for Phase 2



3.5 Materials

Recruitment Strategy: The Qualtrics^{XM} questionnaire included 42 questions to gather initial information about the use of animal-assisted interventions in schools across the UK.

Depending on the answers given, participants completed a minimum of 9 questions and a maximum of 20 questions. The questions included in the questionnaire can be found in Appendix C.

Phase 2: A semi-structured interview schedule (Appendix D) was developed for each of the individual interviews to help direct conversation towards the research topic (Kallio et al., 2016). Data provided within the questionnaire in the recruitment phase was reviewed and

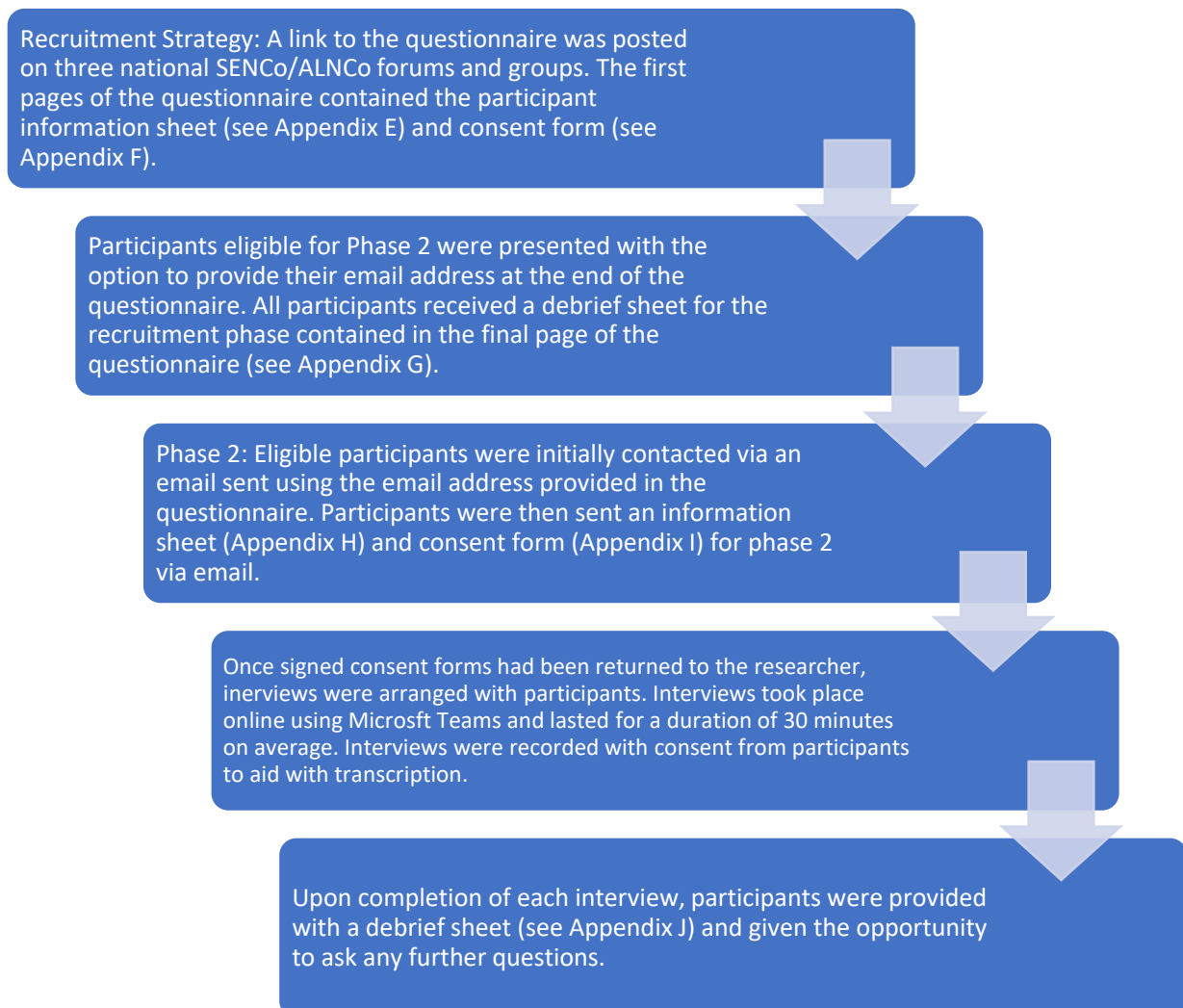
contributed towards the development of each interview schedule to ensure that the questions included were appropriate for each participant. The interview schedules consisted of main themes and follow-up questions (Kallio et al., 2016), which were used flexibly to allow the conversation to flow naturally and to build rapport with participants (Braun & Clarke, 2013).

3.6 Procedure

A flow chart of the procedure of this study is included in Figure 8.

Figure 8

Research Procedure



3.7 Data Collection and Analysis

Recruitment Strategy: Qualitative and quantitative data was collected through the online questionnaire, which was examined to identify and recruit appropriate participants for inclusion in Phase 2.

Phase 2: Participants took part individually in semi-structured interviews online with the researcher, using a secure Microsoft Teams account. These were recorded using the record feature on Microsoft Teams. The interviews were then anonymously transcribed (see Appendix K) using Braun & Clarke's (2013) orthographic transcription (adapted from Jefferson, 2004) (see Appendix L). Following this, the data was analysed using Braun & Clarke's (2006, 2020) six-step Thematic Analysis (TA) (see Appendix M). All stages of the TA were completed by hand to reflect the importance of the researcher playing an active role in this analysis (Braun & Clarke, 2020). Completing the initial coding of the data by hand, as opposed to using computer programming software, also allowed for the coding process to continue and extend the familiarisation stage of the analysis. The coding was undertaken in an inductive way, allowing semantic themes to arise from the data (Braun & Clarke, 2013) (see Appendix N for an example of the coding). A conscious effort was made to avoid placing any importance on the frequency of a code, as frequency is not seen as a reliable indicator of significance within TA. In line with the contextualist epistemology of this study, the data-derived codes allowed for semantic themes to arise which gave a true reflection of the concepts identified by participants during the interviews (Braun & Clarke, 2006, 2013). This inductive, 'bottom-up' approach to the TA allowed for the analysis to be truly data-driven, with the identified themes being strongly linked to the data.

3.8 Validity and Reliability

It is important to demonstrate that qualitative research has been carried out to a high standard and has produced useful findings (Yardley, 2017). This study has therefore been assessed against four dimensions, as proposed by Yardley (2008), in order to enhance,

evaluate and demonstrate the quality of the research. Table 5 below details how each of these dimensions has been addressed within this study.

Table 5

Demonstration of Validity and Reliability

Dimension	How addressed
Sensitivity to context	<p>The existing literature was examined in detail through a narrative and a systematic review. This increased the researcher’s awareness of the wider context of the topic.</p> <p>A questionnaire was circulated nationally, in an attempt to gather a range of perspectives from a broad geographical area.</p> <p>Participants’ responses to the questionnaire were reviewed in advance of each semi-structured interview to increase the researcher’s sensitivity to the individual context of each participant.</p> <p>Open-ended questions were used throughout the semi-structured interviews to elicit participants’ own perspectives.</p> <p>The inductive approach to the thematic analysis allowed for the generation of semantic themes, which helped to ensure</p>

	<p>that participants' perspectives were reflected more authentically.</p> <p>Ethical approval for this study was granted by the School of Psychology Research Ethics Committee, and ethical considerations were explored in detail (Table 6).</p>
<p>Commitment and rigour</p>	<p>The methodology was carefully considered, and then reviewed, to allow for necessary changes as a result of the Covid-19 pandemic.</p> <p>The study was conducted in two phases in an attempt to achieve an in-depth method of data collection.</p> <p>Participants were recruited from across the UK to provide breadth to the data.</p> <p>Interview schedules were developed using the framework of Kallio et al. (2016), and then modified after reviewing the questionnaire data for each individual participant prior to every interview, to ensure that the questions in the interview schedules were appropriate for each participant.</p> <p>Braun and Clarke's (2006, 2020) Six-Stage thematic analysis was undertaken to</p>

	<p>ensure that a thorough, in-depth analysis was completed.</p> <p>All stages of the thematic analysis were completed by hand to ensure that the researcher remained fully immersed in the data throughout the analysis.</p> <p>Regular supervision was sought through each stage of the analysis, which allowed for all themes and subthemes to be triangulated with the research supervisor.</p>
<p>Transparency and coherence</p>	<p>The methodology section provides a detailed account of the study, including the design, materials, and procedure.</p> <p>The ontological and epistemological positions were given careful consideration, and a transparent account of the evolution of these perspectives is provided in Part 3.</p> <p>All interview transcripts will be retained for 10 years (as specified by the Medical Research Council) and would therefore be available as further evidence of how the themes and subthemes relate to the original dataset.</p> <p>Evidence of theme and subtheme development is included in Appendix O to</p>

	<p>ensure transparency throughout the process of analysis.</p> <p>Part 3 provides a critical appraisal of the research to demonstrate the development of the research, as well as the reflexivity of the researcher.</p>
Impact and importance	<p>A clear gap in the existing literature was identified as a result of the thorough narrative and systematic reviews undertaken.</p> <p>Implications for practice are considered, addressing the relevance of this research for teachers, schools, EPs and LAs, as well as for policy and legislation within the DfE and government more broadly.</p>

3.9 Ethical Considerations

This project received ethical approval from the School of Psychology Research Ethics Committee (SREC) (Appendix P). The ethical considerations for this research and how these were addressed are presented below in Table 6.

Table 6

Ethical Considerations

Ethical Consideration	How addressed
Informed Consent	Recruitment Strategy: The first pages of the questionnaire contained the participant

	<p>information sheet [see Appendix E] and participant consent form [see Appendix F]. Participants were required to tick a box to indicate consent before they could complete the questionnaire.</p> <p>Phase 2: Potential participants were initially contacted via an email sent using the email address provided at the end of the recruitment questionnaire. Participants were then sent an information sheet (Appendix H) and a consent form for Phase 2 (Appendix I) via email. Participants were required to complete and return the consent form prior to the interviews commencing.</p>
Confidentiality and Anonymity	<p>Recruitment Strategy: participants were able to remain anonymous if desired, by not providing an email address at the end of the questionnaire (if eligible for Phase 2). If participants chose to provide an email address, care was then taken to ensure that their responses were kept confidential within a secure Qualtrics^{XM} account, only accessible with the researcher's username and password.</p> <p>Phase 2: interview recordings were initially stored on a secure, password-protected computer to ensure confidentiality. Once these recordings were transcribed, all</p>

	<p>identifying information was removed or replaced with a pseudonym to achieve anonymity. The audio recordings were then deleted to ensure all remaining data was held anonymously.</p>
<p>Right to Withdraw</p>	<p>Recruitment Strategy: participants received information at the beginning of the questionnaire to inform them of their right to withdraw, which would be possible up until their responses were submitted.</p> <p>Phase 2: participants received an information sheet and consent form, and were advised verbally of their right to withdraw, which they were informed would be possible up until the transcription of data (approximately two months from the interview date) when all information would be made anonymous.</p>
<p>Debrief</p>	<p>Recruitment Strategy: upon completion of the questionnaire, all participants were provided with a debrief sheet [Appendix G], contained in the final page of the questionnaire. Participants' data was not submitted until they had clicked to indicate they had read the debrief form.</p> <p>Phase 2: At the end of each interview, participants were sent a debrief sheet (Appendix J), which included details about the study and how their information would</p>

	be used. The debrief sheet also included the contact information of the researcher, research supervisor and ethics committee for participants to contact, should they have any further questions or concerns.
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4. Results

The findings from the thematic analysis are presented below. The overall themes and subthemes are presented within a thematic map (Figure 9), and each will be discussed below. The initial coding of the interview transcripts allowed for the identification of subthemes, which were then grouped into five overarching themes. Illustrative quotes are included to demonstrate each of these subthemes. A full list of quotes for each theme can be found in Appendix Q.

Figure 9
Thematic Map



4.1 Theme 1: Impact on Relationships

Table 7

Theme 1 (Impact on Relationships) and Subthemes, With Illustrative Quotes

Theme 1: Impact on Relationships	
<p>The subthemes that comprise this overall theme address the impact of the AAI on the relationships between the individuals involved in these interventions. Specifically, participants mentioned benefits for the relationship between the adult and the pupil, that were said to be facilitated by the inclusion of the dog within these interventions. Participants also identified the importance of the relationships that were formed between the dog and the pupil as a result of these interventions.</p>	
Subtheme	Illustrative Quotes
<p><u>Adult-Pupil Relationship</u></p> <p>A number of participants reported that the AAIs were particularly effective in developing the relationships between teachers and pupils. This was frequently reported when the teacher responsible for the dog was the Headteacher within the school and demonstrates that participants viewed the presence of the dog as having a social-facilitation effect for the individuals involved in the interventions. Many individuals noted that pupils were happier to talk to the adults when the dog was present. Additionally, the presence of the dog within the school environment was said to help the adults talk to the pupils, especially for new pupils who had recently joined the school. This social facilitation effect appeared to be noticed for both the pupils and the adults within the school.</p>	<p><i>“It helps her [headteacher] as well, get to know the children, especially the new children who have arrived” P5</i></p> <p><i>“He’s a little boy that wouldn’t have spoken to me [headteacher] before” P2</i></p> <p><i>“It [the dog] gave us a talking point. Something else to focus on” P6</i></p>

<p>Additionally, specific benefits from the presence of the dog during interventions with pupils were noted. Participants identified benefits that may not have occurred without the dog being included in these types of interventions.</p> <p>Participants also discussed features of the relationships that were formed between adults and pupils within these interventions. Some participants identified trust as being a key feature of these relationships.</p>	<p><i>“I think without Alfie a handful of children just wouldn't open up and I think their meltdowns would be bigger” P5</i></p> <p><i>“The children feel very relaxed with him urm you know they feel they can trust him. He's building that trust with them” P4</i></p>
<p><u>Dog-Pupil Relationship</u></p> <p>Participants discussed the relationships that were identified as having formed between the pupils and the dog as a result of these interventions, and frequently referred to the bond and trust that existed between the pupil and the dog. One participant identified that pupils were seen to engage particularly positively with the dog and another participant noted the strength of the relationship that a pupil had formed with the dog. Trust was also identified as a key feature of the relationships that formed between pupils and the dog within these AAls.</p>	<p><i>“The children who have got social emotional difficulties (.) what we see is that they really engage with Milo. They love playing with him” P3</i></p> <p><i>“He'll probably be with Milo for a year actually because he's got that really strong relationship” P3</i></p> <p><i>“Children trust them [dogs] don't they” P2</i></p>

4.2 Theme 2: The Focus

Table 8

Theme 2 (The Focus) and Subthemes, With Illustrative Quotes

Theme 2: The Focus	
<p>This theme represents the variety of different uses of the dog within the school environment to support pupils. Often participants referred to specific identified ways in which the dogs were used to support pupils in a key area. However, participants also identified additional ways in which the dogs were used, many of which extended beyond the intended initial focus of the AAI.</p>	
Subtheme	Illustrative Quotes
<p><u>Social, Emotional and Behavioural</u></p> <p>Participants frequently grouped social, emotional and behavioural needs together and referred to these synonymously. As a result, this led to the emergence of a subtheme grouped in the same way.</p> <p>Within this subtheme, participants referred to both specific needs of pupils that the AAI had been used to target, and also benefits to particular areas that came about as a result of the AAI.</p> <p>Participants often described behavioural needs identified of the pupils chosen for participation in the AAI.</p> <p>Participants also discussed the types of social and emotional needs exhibited by the pupils who were involved in the AAI.</p>	<p><i>"We have deliberately targeted those children who have behaviour challenges" P3</i></p> <p><i>"A couple of those students as well have got social and emotional issues"</i> P1</p>

<p>Some participants also discussed how beneficial the AAI had been for developing pupils' social skills. Often participants identified that pupils appeared to be more communicative and talkative following the interventions.</p> <p>It was frequently noted that pupils' relationships with their peers were benefited from participation in the AAI, and that their friendships had improved as a result.</p>	<p><i>"Whereas now their hands are up, they're chatting, at break times and lunch times (.) they're far more social, you know and are mixing with people" P1</i></p> <p><i>"These are the quiet children who never say anything and are actually coming back into class really bubbly..." P1</i></p> <p><i>"...transformed his relationships with his peers" P3</i></p>
<p><u>Literacy</u></p> <p>Most participants referred to literacy as one of the key intended uses of the dogs within the AAI. Often literacy skills were identified as being the main focus of the interventions, with many participants referring to reading, writing and language as being the identified area for the AAI to target.</p> <p>A number of participants referred to reading skills as being the main focus of the interventions. Participants often discussed 'reluctant readers' as being the pupils that were chosen to participate in the AAI. In this way, the inclusion of the dog was also discussed as being an incentive to encourage pupils to read when they would otherwise be hesitant to participate. Although the intervention would indirectly involve the</p>	<p><i>"...working with a group of children who really struggle with reading, and writing, with language" P1</i></p> <p><i>"...one of the ways is to listen to them read" P3</i></p> <p><i>"It really worked with those children that were struggling with reading" P6</i></p>

pupils reading aloud to the adult, the presence of the dog in the room appeared to facilitate this, as the pupils believed they were reading to the dog despite the presence of the adult in the room. Participants identified some of the ways in which this benefited pupils, particularly by enabling them to read in a less pressurised environment.

There appeared generally to be more of an awareness of 'reading dogs' and of the use of dogs within AAls that have pupils' reading skills as a focus. Some participants who weren't currently using dogs to support literacy skills referred to this as being their intention in the future.

"We want him to become like a reading buddy for some of our reluctant readers" P5

"I'd actually really like to do urm Reading to Dogs with her" P6

Mental Health

Pupils' mental health was frequently discussed as being one of the main focuses of the AAls that were being run in schools. Within this subtheme, three additional sub-subthemes arose which capture additional ways in which the interventions were implemented to support students with their mental health.

Wellbeing

Participants placed a great emphasis on pupil wellbeing as being of paramount importance. There appeared to be a strong awareness of the importance of wellbeing amongst the members of staff that were interviewed. Pupil wellbeing was discussed by the majority of participants and was identified as being one of the key ways in

"This is now having a wellbeing (.) side of things" P1

"It's that whole wellbeing, you know?" P2

which students were supported by these interventions.

Anxiety

Another way in which participants discussed the use of AAls to focus on aspects of pupils’ mental health was with respect to anxiety. Participants identified that these interventions were being used to target pupils exhibiting signs of anxiety.

Post-Covid

Additionally, participants referred to the Coronavirus pandemic and how this had knock-on effects for pupils. As a result, the AAls were discussed as being used to target particular needs that were being identified with pupils when they returned to school after the period of school closures and online learning.

"But there's something that's still there and they feel like they need some pastoral support." P4

"We have deliberately targeted those children who are highly anxious or stressed" P3

"We've had a lot of incidents over the Covid when the school was locked down there was lots of incidents with children in the wider families" P5

"We've had a few children that were (.) Covid urm were quite anxious after Covid and they urm they used to come in and just sit with her." P6

4.3 Theme 3: It Helps

Table 9

Theme 3 (It Helps) and Subthemes, With Illustrative Quotes

Theme 3: It Helps
This theme demonstrates how the AAls resulted in beneficial outcomes for the pupils involved. Participants discussed a variety of benefits for the pupils involved in the

interventions. Some of these benefits were intentionally worked towards during the intervention. However, added benefits were also discussed by participants that were identified to have arisen in addition to the intended outcome of the interventions.

Subtheme	Illustrative Quotes
<p><u>Attendance</u></p> <p>One of the main ways in which having a dog present in these schools was helping pupils was in regard to their attendance. A number of participants talked about using the dog to bring pupils into school at the start of the school day. Participants described how being greeted by the dog at the school gate in the morning, as well as the simple act of walking into school with the dog, helped to lessen the anxiety of pupils who may otherwise have found it difficult to attend school.</p> <p>Additionally, participants identified that pupils' attendance was better on the days on which they knew they would be working with the dog. In this way, the dog was discussed as acting as an effective incentive to encourage pupils to attend school.</p>	<p><i>"One [pupil] is struggling to come in and again he is Teddy is bringing her in" P2</i></p> <p><i>"If we've got a child who doesn't particularly want to come into school, I might take her outside and they'll (.) they're more than happy usually to walk in with her" P6</i></p> <p><i>"His attendance is good because he knows he's working with Milo" P3</i></p> <p><i>"Coming into school isn't enough, they need something else that sort of encourages them and wants you know to be there" P2</i></p>
<p><u>Knock-On Effects on Learning</u></p> <p>This subtheme reflects the additional impact that the dog was identified as having for pupils, in areas other than those that the AAI was intended to address. Participants recognised that there</p>	<p><i>"And you could see the knock-on effect with the learning" P1</i></p> <p><i>"It will be difficult to tease it out as an intervention that works by itself</i></p>

<p>were broader benefits for pupils when they were included in the AAI that went beyond the intended main focus of the intervention.</p> <p>As well as this, participants recognised that simply working with the dog present in the room had a beneficial effect on learning for pupils. One participant proposed that this was due to the calming effect of the presence of the dog, which they suggested helped pupils to engage better with their work.</p> <p>Another participant identified that it was the presence of the dog within the classroom that encouraged pupils to remain in class, which as a result was beneficial for their learning as they were present for more of the lessons than they would have been otherwise.</p>	<p><i>'cause you would hope that there's more things happening than just the child reading to the dog." P2</i></p> <p><i>"When working with Milo what it does is it relaxes them and it enables them to engage with their urm front frontal lobe really: their thinking brain" P3</i></p> <p><i>"There's less out-of-class time so obviously they are learning more within their classroom" P5</i></p>
<p><u>Behaviour</u></p> <p>Within this subtheme, participants discussed the impact of the AAI on pupils' behaviour. It was identified that the AAI had a positive effect on behaviour more generally for those individual pupils involved in the interventions.</p> <p>Participants also discussed how the presence of the dog within the school had served as an effective behaviour management tool. Some participants discussed this in the context of the dog acting as a motivation for pupils. As a result,</p>	<p><i>"It's transformed his behaviour" P3</i></p> <p><i>"He's a good behaviour management tool as well" P3</i></p> <p><i>"Once they had finished their spelling test, they used to sit down and pet</i></p>

the presence of the dog was identified as having improved the behaviour of pupils.

In addition to this, participants discussed how these changes in behaviour had been evidenced using behavioural data within the school. In this way, it was possible for staff to quantify the effect on behaviour of the inclusion of the dog within interventions.

her in turn and then go off to their class and it was a bit of a treat" P6

"His behaviour chart has now gone from being spiky to, you know, it's very rare occasions." P3

"We've seen already sort of positive changes like within behaviour records." P4

A Fun Activity

This subtheme reflects how participants viewed the AAI in their school as being an enjoyable activity for pupils to become involved in. There were two main sub-subthemes that arose when participants were discussing the ways in which the presence of the dog was beneficial.

Dog as a Distraction

Firstly, participants described how the presence of the dog was a positive distraction for pupils. This meant that they were distracted from the true aim of the intervention which helped the intervention to be more purposeful.

Having the dog present as a distraction was said to have helped some pupils to open up to the supporting adult and discuss things that they may otherwise have found difficult.

"He's a really good distraction because they're stroking Alfie and then it all comes out" P5

"It's the dog that's the distraction. So they pet the dog, they you know you can imagine how excited they get. They let the dog lick their hands and whatnot." P4

It was also identified that the dog served as an effective distraction when pupils were involved in specific reading interventions. Pupils were said to be happy to read to the dog, whereas they would have been reluctant to read directly to an adult. Therefore, the presence of the dog within these types of reading interventions helped to distract pupils from the fact that they were indirectly reading to the supporting adult within the AAI.

Taking the Dog for a Walk

Another enjoyable way that participants described the dogs being used within the school was for short walks with key pupils and a supporting adult. These special walks were said to be enjoyable for the pupils involved and participants often described how this was a popular activity for pupils to become involved in. Participants identified how taking the dog for a walk gave the pupils a sense of responsibility which was said to benefit them. Pupils were also described as enjoying being given this additional responsibility.

Wellbeing

Participants also recognised the impact that the AAI had on pupils' wellbeing. These benefits were often discussed in terms of general wellbeing. However, many participants discussed this in more depth and recognised more specific positive effects of the presence of the dog that contributed positively to pupils' overall wellbeing.

"They have the confidence to talk to Milo, and of course what they're doing they're reading to his owner."

P3

"They don't believe that they're reading to an adult." **P1**

"[Pupil] also has a special walk with him at lunchtime" **P2**

"Children take it in turns to walk him. They are on a rota basis and this little group take him for a walk" **P5**

"They love the responsibility of being with him. They learn how to do tricks with him. They take him for a walk"

P3

"It benefits their wellbeing" **P6**

As a result, three additional sub-subthemes could be identified within the overarching subtheme of wellbeing.

Calming

Many participants recognised that the presence of the dog had a calming affect for pupils.

Interestingly, not only was this discussed as being true for pupils who were directly involved in the AAI, but also more generally throughout the school when the dog was present onsite.

Someone to talk to

Participants discussed the value of using the dog as a tool to encourage pupils to open up and discuss things that they may otherwise have found difficult. Often participants recognised that pupils appeared to find it easier to talk to the dog, even when this was in the presence of a supporting adult. As a result, the inclusion of the dog appeared to serve as a social facilitation effect that helped pupils to discuss challenging topics or any issues that were troubling them.

Some participants suggested that the inclusion of the dog removed some of the pressure that pupils may feel when talking to adults, and therefore helped them to engage in discussions that may not have been possible without the dog being present.

Confidence and Self-Esteem

"He has a calming effect" P5

"It's also a calmer atmosphere in the building" P5

"They go down to a safe area where they can sit and talk to him" P5

"It's more like they can tell him things if they want to" P4

Another way in which AAls were found to help pupils was in terms of their self-confidence. It was often identified that pupils' confidence had increased following a period of intervention with the dog in school.

"It just gives them that inner confidence" P3
"His self-esteem, his confidence is rising" P3
"But then actually, when you dig a bit deeper it, it actually ties in a lot with their confidence and their self-esteem" P2

Other participants referred specifically to the ways in which pupils had been given additional responsibility to help care for the dog in school and referenced this as having contributed to the increase in their self-esteem.

"He's got that sense of responsibility as well so (.) and I think he's grown his resilience" P3
"They have the confidence to talk to Milo (.) we've given them a sense of responsibility" P3

4.4 Theme 4: What People Think

Table 10

Theme 4 (What People Think) and Subthemes, With Illustrative Quotes

Theme 4: What People Think	
This main theme developed from participants discussing the reactions of individuals to the introduction of a dog within the school environment.	
Subtheme	Illustrative Quotes
<u>Staff</u> When discussing the presence of dogs on the school site, in addition to the benefits for pupils,	<i>"They [staff] were like 'oh can we pat the dog? Can we have a session?'" P4</i>

<p>it was also recognised that there was a positive impact for staff members. Whilst staff wellbeing was not discussed as being a consideration when the dogs were initially introduced to the schools, participants noted the knock-on effects for staff of being able to interact with the dogs at school.</p> <p>Whilst these effects were largely discussed as being positive, there was an appreciation that the presence of a dog on the school site was worrisome for staff members who had a fear of dogs.</p>	<p><i>"...the way staff are just so relaxed with him..." P2</i></p> <p><i>"Lots of staff actually come in and (.) and pat her head and come and have a chat with her at different times. And I've had a particularly tough day so I actually took her down the road for 10 minutes in the afternoon because I just needed a bit of a break from it. So it (.) it gives people that sort of break (.) chance to focus on something else from an adult point of view." P6</i></p> <p><i>"We've only got one [staff member] that's frightened of a dog" P5</i></p> <p><i>"I did have a member of staff sort of email me quite concerned that she that she did have a fear of dogs" P4</i></p>
<p><u>Parents</u></p> <p>The reactions of parents were predominantly discussed as being positive. Parents appeared to be excited about the idea of a dog being present in school, with many parents requesting that their children be included in the AAI.</p>	<p><i>"[parents said] 'oh my goodness that's amazing! Yes of course!" P4</i></p> <p><i>"Parents approaching us and saying 'oh, can my child go? Can my child go?" P1</i></p>
<p><u>Pupils</u></p> <p>The pupil response to the presence of the dogs in the schools was also said to be particularly</p>	<p><i>"...and an hour later she came back in and she was absolutely bouncing, she</i></p>

<p>positive. Pupils were described as being excited to work with the dog, even when previously they may have been reticent or reluctant to complete similar work.</p> <p>Participants also described how pupils would specifically request to work with the dog, and would look forward to the times when they knew they would be included in the AAI.</p>	<p><i>was absolutely thrilled (.) and she was just like 'that was amazing! I can't wait for my other session! I can't wait to go again! I wanna go again! I wanna go every week!'" P4</i></p> <p><i>"...and already we've got children coming up and saying 'when can I go and read to Bella? When can I go and work with Bella? (.) It's like, 'oh, when's she in again next?'" P1</i></p>
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4.5 Theme 5: Other Considerations

Table 11

Theme 5 (Other Considerations) and Subthemes, With Illustrative Quotes

Theme 5: Other Considerations	
<p>This theme came about from participants discussing certain elements that were important to consider when thinking about bringing a dog into the school environment.</p>	
Subtheme	Illustrative Quotes
<p><u>Dog's Training</u></p> <p>It was viewed as important that the dogs in the schools had completed sufficient training to enable them to be used appropriately to support pupils. Participants appeared keen to make the distinction between dogs simply being companion animals and dogs being used in a therapeutic capacity. In this way, the dogs that were present in the schools were perceived to be more than 'school pets' as</p>	<p><i>"She's got all of the certificates to prove that she's passed all of the necessary training" P1</i></p> <p><i>"He's got an assessment to check he's suitable" P2</i></p>

<p>they had received specific training that enabled them to be used in a way to benefit the pupils.</p> <p>In situations where the dogs had not yet completed a formal training programme, participants often referred to an intention to complete training with their dogs.</p>	<p><i>"[headteacher] is looking into training him that way to be a trauma dog" P5</i></p> <p><i>"The aim is to have her qualified and go through the training process with Pets as Therapy" P6</i></p>
<p><u>Dog's Temperament</u></p> <p>Participants recognised that it was essential for the school dog to have the correct temperament in order for them to be suitable for this type of work. Key characteristics, such as 'calm', 'placid' and 'gentle', were identified as being extremely beneficial in integrating the dog into the school environment successfully.</p> <p>The breeds of dog that were being used were Border Terriers, a Golden Labrador, a Golden Retriever, a Cocker Spaniel, a Labradoodle (a Labrador and a Standard Poodle crossbreed), and a Chi-sty (a Chihuahua and a West Highland Terrier crossbreed). The breed of dog was said to be an important consideration as participants proposed that some breeds would be more suited to this type of role than others.</p>	<p><i>"She's so placid and calm" P1</i></p> <p><i>"He's quite calm and he just sits or lies down" P2</i></p> <p><i>"He is so gentle and he senses if a child is upset and he will go to them and they will cuddle or pat him" P3</i></p> <p><i>"I went for that breed because I knew it would be the one that could do the job" P2</i></p>

<p>With regard to the dog's temperament, participants discussed different characteristics of the dogs that had been chosen, and how this had helped to ensure that the dog was suitable for inclusion in the AAI.</p>	<p><i>"The vet's passed comment saying 'she'd make a perfect therapy dog'"</i> P1</p> <p><i>"I know the breeder and right from him being born she looked for the one in the litter that (.) she knew what he needed to be able to do (.) she used to call him Mr Sensible"</i> P2</p>
<p><u>Risk Assessment</u></p> <p>Participants discussed the risk assessments they had in place to cover the use of dogs to support pupils and did not appear to view this as a problem or a barrier to using dogs in this way.</p> <p>Some participants identified that they had received help with the risk assessment from others with experience in using dogs in schools, suggesting that they may initially have perceived the risk assessment to be a challenge but that once they had support in completing this it was no longer a barrier for them.</p>	<p><i>"You do have to take it very seriously when you plan to have a dog in school, you have to do in-depth research and make sure you've covered all the bases and that there's a good risk assessment and that you follow all the guidelines, you know"</i> P3</p> <p><i>"In terms of barriers, there really wasn't really with the risk assessment"</i> P4</p> <p><i>"We were very fortunate that Dogs Helping Kids helped us with the risk assessments"</i> P3</p> <p><i>"Risk assessment wasn't a problem. It was done with help from another</i></p>

	<p><i>school who'd already had their dog"</i></p> <p>P5</p>
<p><u>Value for Money</u></p> <p>Participants discussed the cost of involving a dog in these types of interventions. Often where the dog belonged to the Headteacher or another member of staff there was no cost implication of having the dog at school and therefore these types of interventions were described as being very good value for money given the impact that participants identified that they had.</p> <p>Other types of specific interventions were described as having been bought in by the school and therefore these carried a cost implication for the school. Despite this, the interventions were described as having such an impact for the pupils involved that they were still viewed as good value for money.</p>	<p><i>"We really are getting value for money" P1</i></p> <p><i>"He comes in free of charge" P1</i></p> <p><i>"It's relatively costly (.) but is it more than what you would pay for an average counselling session? Probably not, no ((pause)) we are still getting a very, very good deal"</i></p> <p>P4</p> <p><i>"I think ultimately whatever the cost is I think it's a service that's worth having" P4</i></p>
<p><u>Evidence</u></p> <p>Participants described different ways of evidencing the impact of these interventions. Many referred to observations as being the predominant way in which they could see the positive effect that the AAls were having for pupils. It's worth noting that</p>	<p><i>"It's predominantly through observations at the moment" P1</i></p> <p><i>"At the moment it is purely observational" P1</i></p>

often this was justified as being the way they were evidencing the impact 'at the moment', suggesting that these participants had the intention to evidence the effect in additional ways in the future, once the AAI had become more established in the school.

Despite observations being subjective qualitative data, it was still felt that these provided a reliable and accurate assessment of the impact of the use of dogs, particularly when staff had received input on how to use this information effectively.

There were also additional, more quantifiable types of data that were being used to evidence the impact of the AAls being run in these schools. For specific reading interventions, participants referred to reading levels being used to assess the progress pupils were making.

Other types of school data were also described as being useful for evidencing the benefits of the AAls, including behavioural data and records of behaviour incidents.

For the specific interventions that schools were buying in, as part of this they received reports for the pupils included in the intervention. These reports were used to evidence the progress made by these individuals following a period of intervention.

Some participants demonstrated an awareness of the types of measures that could be used to

"Staff have had an awful lot of training and support on observations and monitoring" P1

"We can look at their reading progress scores as well so there is tangible data there" P3

"Those children that are there for like there for behaviour issues and sort of incidents we obviously monitor." P4

"[Head of programme] will write half termly reports (.) just to like keep a log and keep a track on how those children are doing" P4

"[Head of programme] basically will assess them (.) he'll ask them a

measure the effectiveness of these types of interventions.

On the other hand, some participants discussed how evidencing the impact of these interventions was an area they would like to improve on, and they were keen to receive support to enable them to be able to demonstrate the impact in a more quantifiable way.

series of questions that link to like sort of emotional wellbeing" P4

"I wish I sort of had maybe urm a more solid maybe ground from the school's perspective really just to see like the overall progress" P4

"We do need to perhaps formalise the social emotional sort of levels of what we're observing" P1

"I think evidence base I think that's definitely something we could it's something like we could, we could work on definitely" P4

5. Discussion

This study aimed to explore how schools in the UK are currently using dogs to support their pupils. The professionals interviewed identified a range of outcomes as a result of the dog-assisted interventions being implemented, which contribute to and extend the existing literature on this topic. These findings are discussed below in relation to the overarching and subsidiary research questions, with reference to the existing literature. Implications for practice are also considered.

5.1 Overall Research Question: How are Schools Using Dogs to Support Their Pupils?

5.1.1 Specific Interventions With a Learning Focus.

A number of different types of specific AAI were discussed. Many of these had an identified literacy focus and involved pupils reading aloud in the presence of the dog, with a view to improving their reading skills. Often 'reluctant readers' were targeted for this type of support, as the presence of the dog appeared to be an effective motivation that was successful in encouraging them to read. These pupils were said to believe that they were reading to the dog, and therefore had less anxiety or reticence about reading, even though the adult in the room was also able to hear them. It is likely that in these types of interventions, the dog would respond to pupils positively and in a non-judgmental way, regardless of their reading ability. These findings are consistent with those of Kirnan et al. (2018) and le Roux et al. (2014), who propose that dogs offer unconditional acceptance and act as a non-judgemental listener within reading interventions, which helps to alleviate the anxiety of pupils. As a result, pupils may feel more encouraged to read to a dog compared to an adult, where they may feel more self-conscious about their reading abilities. In the interventions discussed by participants, by simply supporting the identified pupils to read more frequently, it is likely that their reading skills would improve as a result. Additionally, by enabling these pupils to read in an environment where they feel comfortable to read aloud, the supporting adult would also be able to help them with their reading where necessary or appropriate. This additional support is likely to help pupils' reading ability to improve further.

Other types of interventions that were discussed involved pupils taking classwork that they were struggling with or needed additional input on, to work with a supportive adult where the dog would be present. These types of additional curriculum-focused interventions were not discussed in the existing literature on this topic, although improvements in skills such as cognitive task performance were demonstrated when a dog was present by Gee, Belcher, et al. (2012) and Gee, Gould, et al. (2012). This suggests that the application of dog-assisted interventions could be widened beyond that of the reading interventions frequently discussed in the existing literature, to offer opportunities for improvements in additional areas across the curriculum.

More notably, participants did not identify that dog-assisted interventions were being implemented to support pupils with mathematics or numeracy, despite maths-skills being identified in the literature as particularly anxiety-provoking for students (Hill et al., 2016; Petronzi et al., 2019). It is interesting that despite the positive effects reported by participants for pupils with regard to reading skills and literacy, schools do not appear to be extending these interventions into additional subject-areas.

5.1.2 Specific Interventions With a Wellbeing Focus.

Some interventions were being implemented with a clear wellbeing focus, to support identified pupils with particular challenges they may be facing. These interventions were facilitated by a supporting adult and typically involved sessions where the dog would be present to help pupils to feel comfortable to discuss any of the concerns or anxieties they were experiencing. These sessions could involve activities such as taking the dog for a walk around the school site, or they could involve the dog being present for a support session such as a Nurture session. It was identified that the inclusion of dogs within these interventions was particularly successful for pupils with anxiety or where there were mental health concerns. These pupils appeared to find the presence of the dog calming, and this helped them respond well to the interventions. Relatively few studies in the existing literature discussed pupil wellbeing as being the main focus of the dog-assisted interventions, with only Correale et al. (2017) and Zents et al. (2017) identifying wellbeing as the main target for the interventions being examined. Both of these studies were published within the past five years, which may possibly reflect a more recent trend towards a growing appreciation of the importance of pupil wellbeing. Alternatively, as very little of the previous literature was conducted in the UK, it may be that there is in fact a greater emphasis in this country on the importance of supporting pupil wellbeing, as wellbeing was one of the reoccurring themes that consistently emerged in the discussions with professionals in the current study.

5.1.3 Dogs Present in Classrooms.

Dogs were also being used to support pupils more generally within classrooms. The atmosphere in these classes was described as being calm, suggesting that the dogs

contributed towards pupils' behaviour in a positive way. These findings echo those from previous research that reported a reduction in negative behaviours of pupils when a therapy dog was present (Hergovich et al., 2002; Kotrschal & Ortbauer, 2003; Zents et al., 2017).

5.1.4 Dogs Present on the School Site.

Often when the dog was owned by a member of staff, the dog would remain present on the school site for time outside of the designated interventions. This allowed for the dog to be available to pupils in a more flexible and ad hoc manner, as needed. Pupils were often being supported at the start of the school day if they found the transition into school difficult. Some participants described how the dog would walk with pupils into their classroom to help them with this. Other participants described how pupils would sit with the dog for a short period of time, and this would be effective in helping them to regulate at the start of the school day. In this way, the dogs had a calming effect on pupils.

This is one of the novel findings from this study, as none of the previous literature investigated the use of resident school dogs. Two thirds of the participants in this study referred to their school having recently introduced a resident school dog, and so it is possible that this may indicate a growing trend towards schools introducing a resident school dog as opposed to bringing in a therapy dog for discrete interventions. It is also possible that these findings could reflect a UK-specific tendency for schools to adopt a resident school dog, as the majority of the previous research was conducted outside of the UK.

5.2 Subsidiary Research Question: What are the Outcomes that are being Reported?

5.2.1 Social Impact.

5.2.1.1 Relationships.

This research demonstrates that a variety of relationships can be strengthened as a result of participating in an AAI. Many participants noted that teachers in the school had formed better relationships with pupils as a result of having the dog present onsite. This appears to indicate that the dogs act as social catalysts (Reilly et al., 2020) and provide opportunities

for social interactions to take place between staff members – particularly those in senior roles - and pupils, that otherwise would be unlikely to arise naturally. By having the dog present as a neutral subject, it seems to make it easier and more comfortable for pupils to participate in these types of social exchanges. As a result, stronger relationships between pupils and staff members were perceived to have developed.

Many participants also emphasised the strength of the bonds that had formed between the pupils and the dogs following the AAI. When considering the proposed mechanism based on attachment theory (Kruger & Serpell, 2010), this bond between the pupil and the dog is considered fundamental for many of the benefits to be realised as a result of the interventions. Similarly, the importance of unconditional positive regard within therapeutic settings has been highlighted (Rogers, 1957), and it has been suggested that dogs within AAI may offer this type of unconditional love and acceptance (Kruger & Serpell, 2010). The previous findings of Bassette & Taber-Doughty (2013) and Rousseau & Tardif-Williams (2019) have also suggested that greater benefits were observed in the outcome measure when pupils had developed a stronger relationship with the therapy dog, and so it is possible that the bond between the pupils and the dogs in this study contributed towards the positive intervention outcomes. Developing a good bond with the therapy animal may help to reduce the level of stress that the pupils may otherwise feel in an intervention setting, and therefore may enable them to engage with the intervention in a more productive way in order to make progress in an identified area.

5.2.1.2 Social Facilitation.

There were many ways in which the presence of the dog appeared to facilitate social interactions. As discussed, the presence of dogs in the school environment appeared to facilitate interactions between staff members and pupils and as a result strengthened these relationships. Additionally, in specific interventions that included a dog it was found that pupils were more comfortable to talk to the supporting adults, often about difficult or sensitive topics. It is possible that the presence of the dog within the intervention environment may have initially acted as a social buffer (Reilly et al., 2020) and helped pupils to build rapport with the supporting adult in order to form a positive relationship with this individual. This may then have supported the pupils to speak more openly with the adult

during the subsequent intervention period. Moreover, it is possible that the presence of the dog within the intervention environment helped to reduce the level of stress or apprehension felt by the pupils, which may have further helped them to feel more able to discuss any issues that felt pertinent to them with the supporting adult. Whilst the previous literature highlighted that pupils' relationships with their teachers may have improved as a result of dog-assisted interventions, the suggestion that pupils were more comfortable to talk to supporting adults about difficult topics in the presence of the dog is an outcome not previously discussed in the literature. The only similar finding is that of Zents et al. (2017), who reported that the presence of the dog supported and promoted the verbal communication of a pupil with selective mutism. This suggests that there may be an additional benefit of introducing dogs within interventions specifically focused on pupil wellbeing.

5.2.1.3 Improved Social Skills.

Many participants identified that the social interactions between pupils in school had improved following their involvement in an AAI. It is interesting to note that this was reported to have occurred even when the intervention had not specifically targeted the social skills of these pupils. Pupils were said to be more sociable and talkative following the AAI, and their friendships and relationships with their peers improved as a result. This echoes the previous findings of Kirnan et al. (2020) and Sorin et al. (2015) who suggested that pupils' relationships with their peers improved following involvement in a dog-assisted reading intervention in which pupils' social skills were not specifically targeted. It is possible that the presence of the dog within the intervention helped pupils to learn more appropriate social behaviours, due to the responses they received from the dog (Kruger & Serpell, 2010). Pupils may then have been able to transfer these new skills to interactions with their peers, thus benefiting their relationships. Additionally, in interventions where pupils had the opportunity to take on some degree of responsibility for the dog, this may have enabled them to make modifications to their behaviours or to learn new behaviours (Kruger & Serpell, 2010). This behaviour change could also have helped the pupils to form better relationships with their peers, particularly for pupils who had displayed more challenging behaviours prior to the period of intervention.

5.2.2 Calming Effect.

Whilst the previous literature has suggested mixed findings relating to the calming effect of AAls, the calming effect of the presence of the dogs in school was emphasised by most participants in this research. Often this was suggested to be school-wide, with the atmosphere across the whole school being described as having become calmer following the introduction of the dog to the school. The calming effects were also evident in individual classrooms where the dog was present, with teachers recognising that the classes which the dogs visited were often the quietest in the whole school. This supports the findings of Kirnan et al. (2020) and Schretzmayer et al. (2017), who proposed that pupils' behaviour was reported to be calmer when dogs were present within interventions. In the current study, the dogs were often discussed by participants as being effective behaviour management tools, as pupils understood that they needed to behave appropriately when the dogs were present. However, it is important to note that in the absence of physiological measures, the calming effect reported is that perceived by school staff. Whilst this is an important construction of participants to recognise, it may not reflect a true physiological calming effect. Previous research by Schretzmayer et al. (2017) has suggested that despite a self-reported or perceived calming effect of a therapy dog, this was not confirmed by physiological measures.

There was also seen to be a calming effect within more specific interventions. Participants described how for pupils who had difficulties regulating their behaviour or who had experienced trauma, the opportunity to sit and talk to the dog had a calming effect on their behaviour. Again, this finding is somewhat novel, as the previous literature did not include interventions where pupils were directly involved in talking to and interacting with the dog. Rather, the studies within the literature review tended to include 'dog present' conditions, with little detail about how the pupils and the dogs interacted together during these interventions.

5.2.3 Dog as a Distraction.

Participants noted that the dog often acted as an effective distraction within the AAI. Often this was discussed in the context of wellbeing AAI, and of pupils feeling able to share

concerns with a supportive adult. Another way in which the presence of the dog in school was said to be a good distraction for pupils was when the dog was included within specific interventions with a learning focus. Due to the presence of the dog, pupils did not appear to view these interventions as hard work; rather participants described how pupils were keen to become involved in the interventions. The presence of the dog therefore helped to distract away from the main focus of the interventions as being to support pupils with an area of their schoolwork. In this way, the dog could be viewed as being an effective learning engagement tool that encouraged pupils to engage with an identified area of learning. These findings echo those from the existing literature that suggest that pupils displayed increased motivation and persistence during and after dog-assisted reading interventions (Barber & Proops, 2019; Bassette & Taber-Doughty, 2013; Kirnan et al., 2016, 2020; Rousseau & Tardif-Williams, 2019; Sorin et al., 2015).

5.2.4 Non-judgemental Listener.

Participants discussed how the use of a dog within specific reading interventions was particularly successful in encouraging pupils who may normally be reluctant to read to engage with their reading. This was often described as being due to the dog listening in a non-judgemental way and as a result pupils felt more comfortable reading to the dog, as compared to an adult. These are similar to the findings of Kirnan et al. (2018) who suggested that the inclusion of a dog in reading interventions provided a non-judgemental listener for pupils to help alleviate some of their anxiety around reading. Le Roux et al. (2014) also suggested that pupils were less fearful of making mistakes when reading to a dog, as the unconditional acceptance shown by therapy dogs allowed pupils to feel more comfortable reading out loud.

In interventions with more of a wellbeing focus, the inclusion of the dog was also described as being supportive for pupils and helped them to feel safe to talk to the supportive adults about any worries or concerns they were experiencing. Whilst some participants focused more on this social facilitation effect of the presence of the dog, others identified that pupils would talk directly to the dog. In this way, the dog acted as a non-judgemental listener for pupils. These findings may extend those of Kirnan et al. (2018), demonstrating that the

inclusion of a dog as a non-judgemental listener can have benefits beyond those for reading skills.

5.2.5 Dog as a Motivation.

One of the main ways in which the dogs within schools were found to benefit pupils related to their increased engagement in school. When discussing 'reluctant readers', participants identified that the inclusion of a dog within the reading intervention was an effective way to motivate these pupils to engage in reading and literacy. Pupils who were not engaging with reading previously were found to be much more motivated to read when they were able to read to a dog. As highlighted, these findings are similar to those from the existing research (Barber & Proops, 2019; Bassette & Taber-Doughty, 2013; Kirnan et al., 2016, 2020; Rousseau & Tardif-Williams, 2019; Sorin et al., 2015).

5.2.6 Attendance.

Similar to the findings in the previous literature whereby visits from therapy dogs were found to increase pupil attendance (Zents et al., 2017), participants described how the presence of the dogs at school had been found to help with pupils' attendance. Often the physical presence of the dog was found to benefit pupils as they were accompanied onto the school site by the dog itself. These findings extend the current research on this topic, as the use of a dog to physically walk pupils into school has not been discussed in the previous literature.

On other occasions, pupils were described as being more motivated to attend school if they knew the dog would be present on a particular day. Pupils appeared to enjoy being involved in AAls and looked forward to these. As a result, their attendance was described as more consistent on the days on which these interventions would take place. These findings echo those from previous research which suggested that pupils were more likely to participate more consistently in interventions when they involved a therapy-dog compared to when they did not (Lenihan et al., 2016).

There were also found to be more general benefits for attendance when a dog was present in the school environment. Participants described how pupils' behaviour improved following involvement in AAI, resulting in these pupils spending more time within the classroom and less time out of class. This further supports the findings of Bassette & Taber-Doughty (2013), who suggested that pupils may remain more focused and on-task both during and following an AAI.

5.2.7 Reward

Another way in which the presence of the dog in the school environment served as a motivation for pupils was when time with the dog was provided for pupils as a reward. Pupils were described as enjoying this opportunity to spend time with the dog and looked forward to it. This was therefore found to be an effective motivation for them. As the previous literature mainly focused on the use of therapy dogs within discrete interventions as opposed to resident school dogs, the use of reward time with the dog has not previously been discussed. This therefore demonstrates an additional positive outcome of the use of dogs in schools.

5.3 Post Covid-19

One of the most interesting observations from participants in light of the Covid-19 pandemic was how much the presence of dogs in the school environment had supported pupils during their return to school following the school closures during the pandemic. Sometimes this was discussed in terms of supporting pupils to rebuild their relationships with members of staff. In this way, the dogs could be seen as acting as social catalysts or social mediators (Kruger & Serpell, 2010; Reilly et al., 2020), by supporting positive interactions to take place between pupils and members of staff. In addition to this, participants highlighted how many pupils were identified as being in need of additional support as a direct result of difficult incidents that may have occurred within families during the school closures. Consequently, the use of dogs within interventions specifically focused on pupil wellbeing was frequently highlighted by participants as a positive way to support pupils through the Covid-19 pandemic.

Many participants also described their resident school dog as being a 'Covid purchase' and discussed how the Covid-19 pandemic had provided the perfect opportunity to purchase a new dog and introduce this to the school environment as a resident school dog. It is possible that this finding may be generalisable, meaning schools throughout the UK may also have introduced a resident school dog following the Covid-19 pandemic. This further highlights the importance of this area being governed by appropriate policy and legislation if it is becoming more commonplace for schools across the country to have a resident school dog onsite throughout the school day.

5.4 Implications for Practice

These findings have implications for teachers and schools, as well as for LAs, the DfE and UK policymakers more broadly.

School staff could utilise these findings to inform the use of dog-assisted interventions currently in place and to plan for further interventions to maximise the potential of these types of interventions, to lead to increased outcomes for pupils. This research would also support schools that have recently introduced a dog into their setting following the school closures as a result of the Covid-19 pandemic, to consider the variety of possible interventions that could be undertaken and how these could best meet the needs of their pupils.

However, this research has highlighted the lack of documented statistics regarding the number of schools in the UK that are implementing dog-assisted interventions. A national audit ought to be conducted in order to establish how many schools are using dogs to support their pupils and in what capacity. The DfE and individual LAs need to consider the importance of appropriate policies and legislation being in place to ensure that these types of interventions are sufficiently regulated, to safeguard not only the pupils and staff in these schools, but also the dogs themselves.

5.5 Implications for Educational Psychologists

The implication of these findings for EPs are presented below (Figure 10), in relation to EPs working at the individual, group and systemic levels (Welsh Government, 2016).

Figure 10

Implications for EPs at the Individual, Group, and Systemic Levels

Individual Level	Group Level	Systemic Level
<ul style="list-style-type: none">• EPs are likely to undertake individual work with children and young people who may be accessing these type of interventions; therefore an awareness of how they can be implemented to lead to beneficial outcomes is essential.• It is possible that there could be benefits to be gained as a result of EPs including therapy dogs or resident school dogs in individual work with children and young people, for example to help facilitate social interactions or to increase engagement and motivation.	<ul style="list-style-type: none">• At the whole-school level, EPs would be able to provide training for schools who already have a visiting therapy dog or resident school dog and would like support on how to maximise its potential to benefit students, as well as for schools looking to introduce a dog into their setting. This is especially relevant in the current climate, with consequences from the Covid-19 pandemic meaning that many schools may have recently introduced a dog or may be intending to introduce a dog to support pupils.• EPs could support schools to consider the impact of these types of interventions, and could help schools to evidence the outcomes observed using appropriate measures or tools.	<ul style="list-style-type: none">• As discussed, a national audit is required in order to establish how many schools in the UK have resident school dogs and/or are using dog-assisted interventions. EPs are well placed in their role within LAs to contribute towards this process.• EPs could contribute towards creating national policies to help standardise practice surrounding the use of dogs in schools. There is a need for LAs to ensure their own policies are in place to safeguard pupils and staff, as well as the dogs themselves. EPs could also therefore contribute towards the development of LA policies governing the use of dogs in schools.

5.6 Future Research

Further research is needed into the use of dogs in schools to widen the evidence base. As part of a national audit, surveys or questionnaires could be used to seek information from a wide range of schools in the UK about how they are using dog-assisted interventions to support pupils. This would help to establish whether the findings from this study are representative of the outcomes being identified across the country. Furthermore, case studies could be conducted in partnership with schools who have resident school dogs, to investigate in more detail the impact of these dogs for individual pupils. This would help to provide additional evidence as to how dogs can be used in schools to benefit pupils.

Further research into the effects of dog-assisted interventions for additional anxiety-inducing areas of the curriculum, such as mathematics, would help to illustrate whether the proposed positive outcomes of dog-assisted interventions for pupils' literacy and reading skills are specific to these subject areas, or whether the effects could be extended and evidenced more broadly.

It could also be insightful to explore the perceptions of the pupils involved in these types of interventions to examine whether they themselves identify dog-assisted interventions as being beneficial. It would be interesting to explore the experience of these interventions from the pupils' perspective to see whether similar benefits are identified to those reported by staff members.

5.7 Strengths and Limitations

The strengths and limitations of this study are explored in Table 12 below.

Table 12

Strengths and Limitations

Strengths	Limitations
Use of a dual phase approach, with the initial questionnaire allowing for the	Due to the Covid-19 pandemic, school staff were under unprecedented pressures when

<p>identification and recruitment of the most appropriate participants for Phase 2 of the study. This helped to ensure that participants were willing and able to be involved in the second phase of the study and contributed towards a rich dataset directly focused towards answering the research questions.</p>	<p>the questionnaire was initially circulated. It is proposed that this led to a reduced number of responses to the questionnaire than it would otherwise have been possible to gather. As a result, the questionnaire was not able to be used to gather a broad perspective of the use of dogs in a large number of schools across the whole of the UK. Had this been possible, the questionnaire could have helped to illustrate how many schools in the UK are currently using dogs to support their pupils, which is highlighted as key information that is currently unanswered in the existing literature.</p>
<p>Use of semi-structured interviews allowed for a rich dataset of qualitative data to be gathered and analysed to explore the key themes identified by participants in relation to the research question.</p>	<p>This study had a relatively small sample size, with only six interviews being conducted with staff members from six different schools in the UK. This therefore limits the generalisability of the findings for the UK more broadly.</p>
<p>Interviews were conducted virtually due to the Covid-19 pandemic and government social distancing guidelines. This allowed for participants to be recruited from across the UK, which helped to provide a broader perspective on the use of dogs in schools in the UK. This also increases the generalisability of the findings.</p>	<p>The ontological and epistemological positions of the research meant that the findings reflect participants' constructions of the benefits of introducing dogs into schools. In the absence of measures or data to confirm these findings, it is difficult to make definitive conclusions about the benefits reported.</p>
<p>This study helps to contribute towards the landscape of the use of dogs in mainstream</p>	<p>The very nature of the participants as being keen and willing to become involved in this</p>

<p>schools in the UK, which has previously been somewhat unclear and vague.</p>	<p>research may suggest that they have intrinsically positive views about the use of dogs in schools, or perhaps that they have particularly successful interventions in place within their settings. The findings may therefore not provide an objective representation of the use of dogs in schools across the UK.</p>
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5.8 Conclusion

This study aimed to address a gap in the existing literature, by exploring the use of dogs in mainstream education settings in the UK and identifying the outcomes reported by schools to indicate how dogs could be used to support pupils. Six semi-structured interviews were conducted with staff members from schools identified as currently using dog-assisted interventions. Participants identified a range of possible uses of dogs in schools, some of which extended the previous literature on this topic and some of which were novel findings. Specifically, the emphasis on introducing resident school dogs to support and enhance pupils' wellbeing is an original finding from this research. Participants also recognised that the benefits observed often went beyond the initial intended purpose of the interventions. Whilst participants identified that the dog's temperament and training were important considerations for schools prior to introducing a dog into the school environment, this research has highlighted the lack of official policy and legislation surrounding the use of dogs in schools. EPs are well placed in their role to give support at the systemic level by contributing towards the development of appropriate policies, as well as being able to support in schools at both the individual and group levels.

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“I've seen first-hand the difference that it's made to these children's lives”:

An exploration of the use of dogs in six schools in England and Wales.

Part 3: Critical Appraisal

Word Count: 5538

1. Introduction

This critical appraisal seeks to provide an overview of the research process and an account of the development of both the research itself and of the researcher. It is essential for practitioner psychologists to be able to reflect critically on their practice and consider alternative ways of working (HCPC, 2015). It is therefore hoped that this appraisal will provide the opportunity to demonstrate the development of these reflective skills, through a critical reflection of both the research process and the researcher. Pellegrini (2009) noted the importance of self-reflexivity in research. In this type of qualitative research, the prior experiences, assumptions, and beliefs of the researcher will undoubtedly influence the research process. This appraisal will consider this further in order to provide a reflexive account of the research. Pellegrini (2009) also proposes that it is appropriate for an author to use the first person to accurately reflect their embedded role in the research process. Therefore, to ensure that this critical appraisal is truly reflective and reflexive, the first person will be adopted for the remainder of this paper.

This paper will be structured into two sections. In the first section I provide a critical account of myself as the research practitioner and describe the rationale for particular research choices which I made, including the literature reviews, ontological and epistemological positions, methodology and analysis. In the second section I discuss the origin of this research topic, as well as the contribution of this research to both existing knowledge and future research. The relevance of these findings for EPs and for other professionals is also discussed.

2. Critical Account of the Research Practitioner

2.1 Rationale for Conducting a Narrative Review

As noted by Green et al. (2006), narrative reviews are especially useful for providing a broad perspective of a topic, particularly when the historical context of the area under consideration is of interest. As a result, I felt that an initial narrative review would help to demonstrate the evolution of the therapeutic use of dogs more broadly than would be

possible using a systematic review. It felt important for the context of the subsequent systematic review to first explore how animals have historically been found to be beneficial in wider settings, including within healthcare environments, as well as for individuals with specific medical conditions or additional needs.

Due to the breadth of this area, I found the narrative review a fairly challenging process. I often found myself becoming interested in specific areas that were being summarised within the review, which led to me feeling pulled to include too much detail. When faced with these challenges, I found it helpful to reconsider the purpose of this narrative review: this was to provide the wider historical context of the topic. Adopting this mindset helped me to summarise the literature more appropriately, with only as much detail as was needed for this purpose.

2.2 Rationale for Conducting a Systematic Review

I chose a systematic review to consider the use of dogs worldwide within mainstream education settings, due to Siddaway et al.'s (2019) recommendation that a systematic review be undertaken whenever possible. It felt important to show that explicit and rigorous processes had been followed, in order to demonstrate the high quality of the literature review (Siddaway et al., 2019). The systematic review process itself presented me with particular challenges, as it was quickly deemed necessary to keep the search terms sufficiently broad to ensure that all relevant papers were included. As a result, a large number of papers were identified in the literature searches that did not meet the criteria for inclusion in the review, which made the sifting process time consuming. Even following the initial sifting process, the number of papers that remained for consideration was still very high. Due to the scope of this project, it would not have been appropriate to include all of these papers in the systematic review and doing so would have led the review to offer very broad conclusions. This meant that I needed to review the inclusion criteria in order to refine these further, thus ensuring that the systematic review could be of more relevance to the current research. By refining my inclusion criteria, I was able to identify the pre-existing literature most relevant to the research question. This enabled me to make sure that the

resultant systematic review could effectively consider and summarise the evidence within the existing literature on this topic.

Due to my research question looking specifically at the use of dogs in mainstream schools, I made the decision to exclude research that did not directly examine the effects of a therapeutic dog in a mainstream school environment. This felt important to ensure that the systematic review was most relevant to the research being conducted.

In order to critically evaluate the 21 studies that were included in the systematic review, I used the Critical Appraisal Skills Programme (CASP) Checklists to assess the papers for quality and relevance. I considered alternative approaches, including the Weight of Evidence framework (Gough, 2007), but felt that the CASP Checklists would offer the most flexible approach to the critical appraisal. I used three of the checklists in particular (systematic review, qualitative and case control) to focus the critique of these papers, to ensure that the aims, participant sample, research design and analysis of the included studies were appropriately appraised, and the identified limitations were summarised within Table 3 (CASP, 2018b, 2018c, 2018a).

I found that using a thematic approach to the systematic review helped me to structure and organise the key findings across the literature. By identifying the emergent themes across the literature, I was able to summarise the pre-existing literature in a concise and structured manner. I was also mindful when completing the write-up of the systematic review that I hoped that this research would help to inform a variety of colleagues working within education in the future, and so I felt that it was important to present the systematic review in a way that would feel accessible for the reader. I believe that this thematic approach helped to present the literature review in a clear, comprehensive way appropriate for the intended audience.

Only one paper within the systematic review was conducted in the United Kingdom, with approximately half originating from the United States of America. One critique of this is that the findings from the systematic review may not be as relevant to the UK, or to Wales more specifically. However, I do not believe that there is evidence within the literature to suggest

that the benefits that arise from the therapeutic use of dogs would be geographically specific, and therefore I do feel that the systematic review provides a good basis for the research being undertaken. Further research into the use of dogs in UK schools would help to confirm whether there are any country-specific or culture-specific outcomes. I propose that the lack of UK research papers within the systematic review reflects a national scarcity of research into this area, and this further demonstrates the importance of undertaking this research project.

2.3 Ontology and Epistemology

I initially approached this research by adopting a predominantly realist ontology (Braun & Clarke, 2013). I believed that there was one underlying 'truth' that I could discover primarily through the use of quantitative measures, alongside some qualitative methods. Initially, I firmly believed that the quantitative measures would be the most valuable in revealing the 'truth' that I had set out to discover concerning the impact of the use of dogs in schools. Although it is uncomfortable to admit one's naivety, upon careful reflection I realised that this was a very simplistic viewpoint when proposing this type of mixed-methods research, and I had not given enough consideration to the valuable insights that participants would offer through their involvement in the semi-structured interviews. My original beliefs about there being one underlying truth changed rather substantially, and therefore the ontological position of the research naturally evolved into a critical realist stance (Bhaskar, 1975). Whilst I did still feel that there was an 'underlying truth', I realised that this truth would ultimately be dependent on the subjectivity of participants. In this way, I felt that the 'underlying truth' would be revealed to some degree by my research, but through the subjective lens of the participants which would be influenced by many contextual factors specific to each individual (Bhaskar, 1975).

Alongside the original realist ontological position, I initially approached this research with more of a post-positivist epistemology (Braun & Clarke, 2013). This was reflected in my intention to use the questionnaire in the recruitment phase of the study to 'reveal' how schools throughout the UK were using dogs within therapeutic interventions. In this way, the research was more concerned with gathering the perceived underlying truth about the

use of dogs in schools. This epistemological position was also reflected in the original decision to ask schools to provide data or evidence to be statistically analysed to 'reveal' and quantify the effects for pupils involved in AAls. However, once I started to undertake interviews with participants, the epistemological standpoint of the research shifted towards that of contextualism (Braun & Clarke, 2013). It quickly began to feel very apparent that participants' truths were shaped by their context, and therefore no one method was appropriate for seeking out this truth. What felt more pertinent to me was listening to the contextual truths of participants and being curious about what knowledge the semi-structured interviews would reveal about the use of dogs in schools. The shift towards a critical realist ontological perspective was mirrored by the change in epistemology towards contextualism.

I believe that this shift in ontological and epistemological positions demonstrates the importance of being openly reflective in research. As noted by the HCPC (2015), it is essential for practitioner psychologists to be able to reflect critically on their practice and consider alternative ways of working. By reflecting on my initial approach to this research, and by remaining critical and honest in these reflections, I was able to recognise that the stance I had originally taken was no longer the most appropriate. This therefore allowed me to change the way I was approaching the research in line with how the research was naturally evolving. If I had not engaged in this critical reflection, and had remained steadfast with my initial ontological and epistemological position, it would have become very difficult to answer the research questions.

2.4 Research Design and Development of Methodology

Initially, my proposed research questions differed somewhat from the final research questions I arrived at. Willig (2019) recognises that research questions in qualitative research are flexible and can change in focus during the research process. I had originally hoped to answer two distinct research questions: one concerning how dogs were being used by schools to contribute towards the wellbeing of their pupils, and one concerning how dogs were being used to contribute towards the academic attainment of pupils. However, once I started speaking to participants during the semi-structured interviews, it

became apparent that the benefits for pupils were more intrinsically linked than these research questions would suggest. Moreover, the aims of the AAI's being used in schools would rarely be separated in this way, and staff described how the interventions would often have multiple knock-on benefits for the pupils involved. As a result, it did not feel appropriate to separate wellbeing and academic attainment in this way by having two distinct research questions. It felt more fitting to shift the focus of the research question to encompass both elements in one overarching question that asked more generally 'how are schools using dogs to support their pupils?'

My initial research questions also proposed an additional research question concerning the perceived benefits of using dogs to support pupils within AAI. However, once the semi-structured interviews were being undertaken, I realised that the benefits to pupils were more linked with the aims of the interventions than would be suggested by having a separate research question that referred specifically to the benefits that arise. I therefore adapted this research question and retained it as a subsidiary question to reflect the fact that a number of additional outcomes were noted during the interviews, above and beyond those that were initially anticipated by participants.

Additionally, I had intended to include a research question specifically concerned with the perceived barriers to the therapeutic use of dogs in schools. However, once the semi-structured interviews with school staff had been completed, it became apparent that, contrary to my initial expectations, participants did not identify that they were experiencing any barriers. In line with Willig (2019), I felt it was necessary for the research questions to remain flexible and evolve authentically throughout the course of the research, and as a result, I did not feel it appropriate to retain this research question, given that it would not be directly answered by the study.

2.5 Participants

I initially intended to include three groups of participants within the semi-structured interviews: school ALNCo's, parents and pupils. I felt that it would be interesting to seek the perceptions of these three different groups of participants about their experiences of the

use of dogs in their schools. However, upon reflection and when considering the aims of the research alongside the identified research questions, it was decided that school staff would be best placed to provide the data that would be necessary to address these aims. As a result, I decided instead that six staff members would be recruited from six different schools for participation in the study. Originally, I had proposed to recruit three ALNCos, alongside the other two groups of participants. However, by extending this instead to six members of staff in total, the number of different schools recruited for participation in the study was effectively doubled. As a result, the data collected gave a broader picture of how dogs are being used currently to support pupils across a greater number of schools, thus addressing the research questions more successfully.

I did reflect at length upon the characteristics of the participants who agreed to take part in this study. The very fact that they were keen and willing to participate in this research may suggest that they have particularly positive views about the use of dogs in schools, or perhaps that they have particularly successful interventions in place in their settings. All of the participants discussed the AAls being implemented in their schools with such enthusiasm that whilst this may be taken as direct evidence that the use of dogs within school environments is extremely positive and beneficial for pupils, it may also suggest that the participants who were involved in the study had intrinsically positive views about their AAls. However, this evident positive personal regard of the participants towards the use of dogs within school settings may also have benefitted the research process. Individuals who have more interest in an area are said to be more likely to demonstrate greater participation behaviours (Hidi & Harackiewicz, 2000). As a result, the participants' own personal interest in this topic may have meant that they engaged more fully in the semi-structured interviews and therefore contributed towards a richer dataset.

2.6 Data Collection

Initially, I had intended the questionnaire in the recruitment phase of the study to be circulated nationally to provide a large dataset to demonstrate more broadly how dogs are being used in a large number of schools throughout the UK. However, at the time this questionnaire was posted online, schools were battling with the consequences of the first

wave of the Covid19 pandemic and subsequent school closures. I believe that this had a direct impact on the number of responses I received to the questionnaire and meant that I needed to reconsider how I intended to use these responses. As a result of the questionnaire not being able to fulfil the purpose it was originally intended for, it was decided that it would instead be used to identify mainstream Primary and Secondary Schools that were using dogs to support pupils. In this way, the questionnaire acted successfully as a recruitment tool for identifying appropriate schools which were currently using dogs within their settings, for participation in the second phase of the study. The responses given to the questionnaire meant that it was possible to contact schools who were currently implementing a form of dog-assisted intervention and invite them to provide additional and more detailed information through the semi-structured interviews. Upon reflection, this was actually a very effective method for participant recruitment, as it meant that the participants included in the second phase of the study had already been identified as appropriate and eligible for participation in the research and this therefore helped the semi-structured interviews to proceed efficiently. This also helped to ensure a rich dataset arose from the interviews, as participants were currently implementing dog-assisted interventions in their schools and therefore were best placed to discuss these in detail, providing a rich picture about their use of AAls.

As a result of the Coronavirus pandemic, it was necessary to conduct the interviews virtually as opposed to these being carried out in-person. Although I was initially disappointed about this, as I had originally hoped to be able to visit the settings to see the types of dog-assisted interventions that were being implemented first-hand, this actually appeared to be beneficial for the data collection element of my research. I was able to recruit participants irrespective of their geographical location, meaning that participants' location did not exclude them from participation in the study. Additionally, I was able to collect data from participants across England and Wales, providing evidence to suggest that these types of interventions are being implemented nationally and are not specific to one geographical location or Local Authority (LA). I also believe that the necessity of virtual interviews may have helped some participants to feel more inclined to participate in the research, as these could be arranged more easily and flexibly at a time of their convenience.

2.7 Analysis

I chose Braun & Clarke's (2006, 2020) six stage Thematic Analysis (TA) to analyse the data for this research. One of the main reasons why I felt this to be the most appropriate method for the data analysis was due to its flexibility, in terms of both research questions and methods of data collection. It felt important to me that the chosen method of data analysis did not prescribe particular methods for data collection, nor the ontological and epistemological positions of the research (Braun & Clarke, 2013). Additionally, as a novice researcher it felt to me that TA was an accessible method to use for the data analysis. Given the time constraints and scope of this research, it seemed sensible not to overcomplicate the data analysis, especially given the hope that the results from this research would be made available to a wide range of individuals working within education.

I also considered Interpretive Phenomenological Analysis (IPA) as a possible approach to data analysis, as some elements of the research questions were concerned with exploring people's experiences and the meaning attached to them (Braun & Clarke, 2013). Although both the sample size and method of data collection for this study would have lent themselves perfectly to IPA, upon reflection I felt that this method of analysis placed too great an emphasis on exploring the individual experience of participants, which did not fully align with the aims of this research. IPA would have been more appropriate for this study if the pupils involved in the AAI had themselves been interviewed, as per the initial research proposal.

The first stage of the TA involved familiarisation with the data, a process which started with transcribing the interview recordings. Although I used the transcribe function within Microsoft Word in an attempt to assist with this stage of the analysis, this did not result in the recordings being accurately transcribed. This therefore meant that it was necessary for me to spend time reading and re-reading the interview transcripts, whilst listening to the recordings of the interviews, to amend the errors in the Microsoft Word-formulated transcriptions. Whilst I was initially frustrated at this apparent barrier to progress, upon reflection the necessity of listening to the interview recordings repeatedly, and re-reading the transcriptions, helped me to become highly familiar with the data. This therefore ended up helping a great deal with the TA process and thus demonstrated the importance of

spending time becoming immersed in the data during the initial familiarisation stage of the analysis (Braun & Clarke, 2013).

I completed the initial coding of the data by hand, as opposed to using computer programming software. One of the reasons for this decision was that I felt that this coding process continued and extended the familiarisation stage of the analysis, as I remained fully immersed in the data throughout. Whilst this may have made the coding stage of analysis more time-consuming and perhaps less efficient, I believe that the benefits of coding by hand for the analysis process compensated for this additional time spent. I also felt confident that the coding process was thorough and that nothing had been missed, as I was not relying on programming software to complete this process. However, if the dataset for this research had been larger, perhaps it would have been more important for me to consider the benefits of the use of computer programs in data coding. The coding was undertaken in an inductive way, allowing the subsequent themes to arise from the data (Braun & Clarke, 2013). I made a conscious effort to avoid placing any importance on the frequency of a code, as frequency is not seen as a reliable indicator of significance within TA.

2.8 Ethical Considerations

This research received ethical approval from the School of Psychology Research Ethics Committee, which illustrates that possible ethical issues had been considered and mitigated prior to the research taking place. Once the Coronavirus pandemic made it apparent that the method would need to be adapted to accommodate virtual interviews, I amended and resubmitted the research proposal to the School Research Ethics Committee for reapproval.

When considering the British Psychological Society (BPS)'s (2021) Code of Ethics and Conduct, I gave particular thought to the importance of integrity within principle 3.4, and the requirement for 'accurate unbiased representation' (BPS, 2021, p. 7). I reflected on my role as the researcher and the effect that having a personal interest in this area may have when upholding this principle. I therefore made a conscious effort to ensure that I analysed the data in an unbiased and impartial way, in order to represent the views of participants

accurately within this research project. Nonetheless, it is important to recognise that 'our personal experiences shape how we read data' (Braun and Clarke, 2013, p. 205). Therefore I sought multiple sessions of supervision when completing the coding stage of analysis in order to ensure that the identified emerging themes were a true objective representation of the participants' data. This triangulation also acted as a way of helping to increase the reliability of this research. The full transcripts of the semi-structured interviews are available on request to further increase confidence in the accurate representation of these findings.

3. Contribution to Knowledge

3.1 Origin of the Research Topic

My interest in this area originated from a longstanding love of animals. As an adult, I have experienced first-hand how a companion animal can positively contribute towards many aspects of physical and mental wellbeing. Through owning different animals as pets of my own, I became particularly interested in the apparently unique positive impact of a pet dog on many aspects of my personal wellbeing. I became curious about whether this effect could be seen more widely, and whether these positive impacts could be harnessed for use in different settings, such as schools.

Whilst completing my teacher training, my interest in this area developed further when on one occasion a member of staff brought her pet dog's litter of puppies into the school to visit. I was struck by the engagement of the children during this visit, noting how all pupils were captivated by the presence of the animals in the classroom. Many pupils appeared to relate to the dogs immediately and naturally due to having their own pet animals, whereas other pupils seemed enamoured with the puppies due to the novelty of this event. I wondered whether perhaps this latter group had not previously had the opportunity to interact with animals this closely.

Whilst on placement as a Trainee Educational Psychologist (TEP), I became more aware of a number of schools that were introducing dogs to their settings. Some schools appeared to be using dogs for particular interventions and others discussed how they had introduced

'school dogs'. It sometimes appeared that this was very ad hoc, whereas other times it seemed to be within a more structured programme or intervention. Staff would often talk very positively about these interventions and the impact they were having, and anecdotal reports suggested that there were many different ways in which the dogs were being used and that this was benefiting pupils in a variety of ways. I therefore wondered whether this could be evidenced or quantified in any way, or whether it could be made somewhat more formal so that other schools may be more inclined to implement this type of intervention. I became more interested in investigating these types of dog-assisted interventions in order to ascertain how exactly these dogs were being used in schools to determine the biggest impact for children and young people. This is what I hoped my research would be able to discover.

3.2 Contribution to Existing Knowledge

Whilst there are some previous findings to suggest how dogs may be used within specific interventions in schools internationally, there is a lack of research into the variety of different therapeutic uses of school dogs and the wide-reaching benefits of these for pupils, particularly within the UK. The main gap I identified in the pre-existing research concerned the question of how dogs are incorporated within multiple AAls in schools and how schools in the UK are using school dogs practically to benefit pupils. This study provides a unique insight into how six different schools in England and Wales are implementing interventions using dogs and reveals a variety of different ways in which this can be of benefit to pupils. I therefore hope that this research might become a point of reference for any school looking to introduce a dog to their setting, as well as for any school who would like to maximise the potential of a pre-existing school dog.

There appeared to be an emphasis in the existing literature on the benefits of the use of 'reading dogs' in schools. Whilst this study mirrored these findings to some degree, there was not the overarching emphasis on 'reading dogs' as being the most common or most beneficial use of dogs in schools that the previous research would suggest. In fact, there appeared to be a greater emphasis on the use of dogs to support and improve pupils' wellbeing, which, whilst noted in the previous research, was by no means the predominant

theme. This could reflect the growing awareness of the importance of supporting pupils more pastorally, particularly following the school closures in 2020 and 2021 as a result of the Coronavirus pandemic and the consequences this appears to have had for pupils' mental health.

3.3 Contribution to Future Research

Due to the scope of this project, including the time constraints on the period for data collection, there were some limitations as to what this research could encompass. Although initially I had hoped that the effects of the AAls being implemented in schools could be quantified and evidenced using pre- and post- measures, it became apparent that schools were often not collecting quantitative data in this way. It could therefore be interesting for future research to seek to measure the impact of specific AAls on pupils' wellbeing and mental health using a case study design alongside specific pre- and post- measures. Previous research has often quantified the benefit of AAI for specific academic measures, but there is a need for the significant impact on pupils' emotional wellbeing to be further researched and evidenced. Whilst it was not possible for me to incorporate this quantitative element as intended into the current study, a future case study to measure the effect of school dogs on pupils' wellbeing would contribute well to the existing body of research in this area.

3.4 Relevance to EPs and Other Professionals

I believe that these findings are particularly relevant for EPs and for other professionals that may be involved in working with schools.

The BPS highlight the importance of being aware of research developments (BPS, 2021). It is therefore essential that EPs remain up to date with the current trends in interventions that are being used in schools. As the use of dogs in schools appears to be growing in popularity, it is important for EPs to have a good appreciation of the different ways in which dogs can be used to best support pupils. When considering the position that EPs could take when working with schools to maximise the potential of school dogs, it is possible that schools would benefit from EPs adopting a supervisory role. In this way the schools could be encouraged to explore the range of possible uses of their school dogs and how specific

pupils could benefit from these. A Group Consultation model may also be of benefit to schools, involving staff from multiple schools already implementing AAI. This would provide the opportunity for school staff to share good practice and compare and contrast the ways in which they are using AAI in order to consider whether there may be alternative or additional uses that may further benefit their pupils. EPs could also develop and provide training for schools in this area, if the use of dogs in schools continues to become more popular in the UK. This could help to formalise the use of dogs as an intervention, by sharing good practice amongst schools, as well as encouraging schools to think creatively about the different ways in which dogs could be used to support the specific needs of their pupils.

It is also possible that there could be benefits for EPs from including therapy dogs or resident school dogs in individual work with children and young people. If schools already have a resident school dog who works with pupils, then the EP including this dog when working individually with pupils could help to increase pupils' motivation and engagement, whilst also potentially helping to facilitate social interactions between the EP and the pupils.

EPs are well-placed to support LAs and policymakers more broadly to create and develop appropriate policy and legislation surrounding the use of dogs in schools in the UK. As highlighted, there is currently no official requirement for school dogs in the UK to be trained or registered in any way, and there are no statistics to report the number of schools in the UK that are using dogs to support their pupils (Massey, 2019). EPs could therefore also support logistically within individual LAs in contributing towards the completion of a national audit to help to establish this information.

3.5 Dissemination

Following completion of this research, I feel that I would be well-placed to develop and provide training to schools in this subject area. Schools with a school dog already in place could benefit from training, in order to inform them about the many different ways in which dogs can be used within schools and the multiple ways in which pupils have been found to benefit from these. Schools seeking to introduce a dog into their setting could also benefit

from training in this area, in order to help them consider the variety of possible therapeutic uses of dogs within AAI.

To disseminate these findings more widely across the UK and beyond, I would also consider the possibility of publishing this research in an academic journal in the future. This could help to further raise awareness of the different types of uses of dogs in education, as well as the potential for pupils to benefit in a variety of different ways. Alongside this, the presentation of these findings at a conference, either for EPs or for education colleagues more broadly, would help to raise awareness of this area as growing in popularity.

4. Closing Comments

This critical appraisal has explored the development of the research project and reflected upon a variety of decisions that I made throughout this process. Through writing this critical appraisal, I have been able to demonstrate both reflective and reflexive skills by carefully considering my role as the researcher, and I have aimed to provide an open account of the ways in which I, as the researcher, have had an influence on different aspects of this research. I would be interested in the opportunity to complete additional research in this area, as I believe there is evidence to suggest that it is an area that is growing in popularity. Further research would therefore be beneficial, since it would contribute towards addressing the gaps that remain in the current body of literature.

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Appendices

Appendix A – Systematic Literature Review Search Strategy

Database	Search Terms	Number of articles found
Ovid/Psycinfo	Pet adj2 therap* OR dog adj2 therap* OR animal adj2 therap* OR canine adj2 therap* OR animal adj2 intervention* AND child OR teen OR adolescent OR youth OR primary aged OR school aged	513
SCOPUS	Pet W/2 therap* OR dog W/2 therap* OR animal W/2 therap* OR canine W/2 therap* OR animal W/2 intervention* AND child OR teen OR adolescent OR youth OR primary aged OR school aged	1242
ERIC	Pet NEAR/2 therap* OR dog NEAR/2 therap* OR animal NEAR/2 therap* OR canine NEAR/2 therap* OR animal NEAR/2 intervention* AND child* OR teen* OR adolescent* OR youth* OR primary aged OR school aged	54
BEI	Pet N2 therap* OR dog N2 therap* OR animal N2 therap* OR canine N2 therap* OR animal N2 intervention* AND child OR teen OR adolescent OR youth OR primary aged OR school aged	9
ASSIA	Pet NEAR/2 therap* OR dog NEAR/2 therap* OR animal NEAR/2 therap* OR canine NEAR/2 therap* OR animal NEAR/2 intervention* AND child* OR teen* OR adolescent* OR youth* OR primary aged OR school aged	357
WoS	Pet NEAR/2 therap* OR dog NEAR/2 therap* OR animal NEAR/2 therap* OR canine NEAR/2 therap* OR animal NEAR/2 intervention* AND child OR teen OR adolescent OR youth OR primary aged OR school aged	83

Appendix B – Excluded studies from Systematic Literature Review with reasons

Reference	Reason for Exclusion
<p>Brookner, L. F. (2018). Is therapy going to the dogs? Evaluating animal assisted therapy for early identified at-risk children. <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i>, 79(9-A(E)), No-Specified. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc15&NEWS=N&AN=2018-30339-057</p>	<p>Did not meet inclusion criteria: conducted in a mainstream school setting. Published in a peer-reviewed journal.</p> <p>This dissertation examined the benefits of animal-assisted therapy, using therapy dogs, within a community-based intervention programme, as opposed to being conducted in a mainstream school setting.</p>
<p>Brous, M. T. (2010). Integrating Pet Therapy into Daily School Life. <i>Exceptional Parent</i>, 40(5), 20–21. http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ890064&site=ehost-live&scope=site</p>	<p>Did not meet inclusion criteria: published in a peer reviewed journal.</p> <p>This dissertation was not selected for inclusion in the systematic review due to not being published in a peer-reviewed journal.</p>
<p>Carlyle, D. (2019). Walking in rhythm with Deleuze and a dog inside the classroom: being and becoming well and happy together. <i>Medical Humanities</i>, 45(2), 199. https://doi.org/http://dx.doi.org/10.1136/medhum-2018-011634</p>	<p>Did not meet inclusion criteria: explores the use of a dog within an education setting</p> <p>This research was primarily focused on examining the interspecies relationship between pupils and a dog by recording moment-to-moment child-dog interactions to investigate their non-</p>

	conscious experience, rather than investigating the use of the dog within the school setting.
<p>Cirulli, F., Borgi, M., Berry, A., Francia, N., & Alleva, E. (2011). Animal-assisted interventions as innovative tools for mental health. <i>Annali Dell'Istituto Superiore Di Sanita</i>, 47(4), 341–348.</p> <p>https://doi.org/10.4415/ANN_11_04_04</p>	<p>Did not meet inclusion criteria: Empirical studies utilising an experimental design or a case study design.</p> <p>This review paper looked at the effect of AAls more broadly. The relevant original empirical papers looking specifically at the use of dogs in mainstream educational settings have therefore been included in the systematic review.</p>
<p>Comartin, K. P. (2018). Is man’s best friend a best practice in public education? Animal-assisted interventions in classrooms and school-based therapeutic settings. <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i>, 79(9-A(E)), No-Specified.</p> <p>https://manchester.idm.oclc.org/login?url=https://search.proquest.com/docview/2041936152?accountid=12253%0Ahttp://manchester.hosted.exlibrisgroup.com/openurl/44MAN/44MAN_services_page?genre=dissertations+%26+theses&atitle=&author=Comartin%2C+Kevin+P.&volume=&</p>	<p>Did not meet inclusion criteria: empirical studies utilising an experimental design or case study design. Explores the use of a dog within an education setting. Published in a peer-reviewed journal.</p> <p>This dissertation looked at AAls more broadly as opposed to specifically investigating the unique effect of dogs within education settings.</p>

<p>Fedor, J. (2018). Animal-Assisted Therapy Supports Student Connectedness. <i>NASN School Nurse (Print)</i>, 33(6), 355–358. https://doi.org/10.1177/1942602X18776424</p>	<p>Did not meet inclusion criteria: empirical studies utilising an experimental design or case study design. Explores the use of a dog within an education setting.</p> <p>This descriptive article looked at AAT in schools more broadly, with a specific focus on the role of the school nurse in facilitating these interventions.</p>
<p>Finn-Stevenson PhD, M., & Finn-Stevenson, M. (2016). The Transformative Power of the Dog: The Growing Use of Canine Assistants in Therapeutic Interventions and School Settings. <i>Journal of the American Academy of Child and Adolescent Psychiatry</i>, 55(6), 437–438. https://doi.org/10.1016/j.jaac.2016.03.010</p>	<p>Duplicate publication: this paper reviewed the findings of several of the empirical papers selected for inclusion in the literature review. The original empirical papers have therefore been included in the review.</p>
<p>Hall, S. S., Gee, N. R., & Mills, D. S. (2016). Children reading to dogs: A systematic review of the literature. <i>PLoS ONE</i>, 11(2), 1–22. https://doi.org/10.1371/journal.pone.0149759</p>	<p>Duplicate publication: this review paper examined many of the empirical papers included in the literature review. The original empirical papers have therefore been included in the review.</p>
<p>Jenkins, C. D. (2010). Exploring the impact of an animal assisted therapy dog upon the emotional, educational, and social actualization of middle school students receiving counselling services. <i>Dissertation</i></p>	<p>Did not meet inclusion criteria: Published in a peer-reviewed journal.</p> <p>This dissertation was not selected for inclusion in the systematic review due to</p>

<p><i>Abstracts International Section A: Humanities and Social Sciences, 70(7-A), 2397.</i></p> <p>http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc7&NEWS=N&AN=2010-99010-444</p>	<p>it not being published in a peer-reviewed journal.</p>
<p>Long, L. (2010). Effectiveness of animal-assisted therapy interventions in altering childhood aggressive behaviors. <i>Dissertation Abstracts International: Section B: The Sciences and Engineering, 70(8-B), 5146.</i></p> <p>http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc7&NEWS=N&AN=2010-99040-283</p>	<p>Did not meet inclusion criteria: Conducted in a mainstream school setting. Published in a peer-reviewed journal.</p> <p>This dissertation was conducted in a therapeutic alternative school as opposed to a mainstream school setting. This dissertation had also not been published in a peer-reviewed journal and therefore did not meet the inclusion criteria for the systematic review.</p>
<p>Lubbe, C., & Scholtz, S. (2013). The application of animal-assisted therapy in the South African context: A case study. <i>South African Journal of Psychology, 43(1), 116–129.</i></p> <p>https://doi.org/10.1177/0081246312474405</p> <p>http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc7&NEWS=N&AN=2010-99010-444</p>	<p>Did not meet inclusion criteria: Conducted in a mainstream school setting.</p> <p>This case study explored the use of animal-assisted therapy by examining the interactions between a child and a therapy dog, but was conducted in a therapy setting as opposed to a mainstream school setting.</p>

<p>Reilly, K. M., Adesope, O. O., & Erdman, P. (2020). The Effects of Dogs on Learning: A Meta-Analysis. <i>Anthrozoos</i>, 33(3), 339–360. https://doi.org/10.1080/08927936.2020.1746523</p>	<p>Duplicate publication: this meta-analysis reviewed many of the empirical papers included in the literature review. The original empirical papers have therefore been included in the review.</p>
<p>Roberts-Schneider, M. (2017). How educators use dogs to support children’s social, emotional, and behavioral development. <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i>, 77(12-A(E)), No-Specified. http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc14&NEWS=N&AN=2016-58398-086</p>	<p>Did not meet inclusion criteria: Published in a peer-reviewed journal.</p> <p>This dissertation was not selected for inclusion in the systematic review due to it not being published in a peer-reviewed journal.</p>
<p>Robino, A. E., Corrigan, V. K., Anderson, B., Werre, S., Farley, J. P., Marmagas, S. W., & Buechner-Maxwell, V. (2020). College Student Mental Health in an Animal-Assisted Intervention Program: A Preliminary Study. <i>Journal of Creativity in Mental Health</i>, 00(00), 1–10. https://doi.org/10.1080/15401383.2020.1757002</p>	<p>Did not meet inclusion criteria: conducted with pupils aged 3-18.</p> <p>This study investigated the impact of an animal-assisted intervention in a University setting, with predominately Undergraduate participants aged 18 or over. This paper was therefore not included in the systematic review as it was not conducted with school-aged pupils, aged between 3 and 18 years.</p>
<p>Shaw, D. M. (2013). Man’s Best Friend as a Reading Facilitator. <i>Reading Teacher</i>, 66(5), 365–371.</p>	<p>Did not meet inclusion criteria: empirical studies utilising an experimental design or case study design.</p>

<p>https://doi.org/10.1002/TRTR.01136</p>	<p>This manuscript provided information specifically about the READ programme and described experiences of participants involved in the programme but did not conduct an empirical investigation using an experimental or case study design.</p>
<p>Tamborello, S. (2018). The impact of fourth-graders' participation in a Reading Education Assistance Dog RTM (R.E.A.D. RTM) program has on overall reading, vocabulary, comprehension, and lexile RTM scores. <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i>, 79(9-A(E)), No-Specified.</p> <p>http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc15&NEWS=N&AN=2018-30339-039</p>	<p>Did not meet inclusion criteria: Published in a peer-reviewed journal.</p> <p>This dissertation was not selected for inclusion in the systematic review due to not being published in a peer-reviewed journal.</p>
<p>Tate, K. J. (2015). Utilizing canines in a public school setting: A case study. <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i>, 75(10-A(E)), No-Specified.</p> <p>http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=psyc12&NEWS=N&AN=2015-99071-224</p>	<p>Did not meet inclusion criteria: Published in a peer-reviewed journal.</p> <p>This dissertation was not selected for inclusion in the systematic review due to not being published in a peer-reviewed journal.</p>
<p>Wong, P. W. C. C., Yu, R. W. M. M., Li, T. M. H. H., Lai, S. L. H. H., Ng, H. Y. H. H., & Fan,</p>	<p>Did not meet inclusion criteria: Explores the use of a dog within an education</p>

<p>W. T. W. W. (2019). Efficacy of a multicomponent intervention with animal-assisted therapy for socially withdrawn youth in Hong Kong. <i>Society and Animals</i>, 27(5–6), 614–627.</p> <p>https://doi.org/10.1163/15685306-12341462</p>	<p>setting. Conducted in a mainstream school setting.</p> <p>This study recruited participants from non-governmental organizations, schools, and a hotline inquiry service and utilised a dog as the therapy animal but as the research was not conducted within a school this paper could not be seen to investigate the impact of the use of a dog within an education setting.</p>
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Appendix C – Qualtrics Questionnaire (Recruitment Phase)

Consent Form

I understand this study will involve completing a short questionnaire. I understand that I will be asked a few questions about the therapeutic use of animals in school, including my opinions on the therapeutic use of animals in school.

I understand that the personal data will be processed in accordance with GDPR regulations (see privacy statement below).

I understand that the data collected will be kept confidentially using online questionnaire software, and then kept for a minimum of 10 years by Cardiff University once the study has been completed (as recommended by the Medical Research Council).

Privacy Notice:

The information provided will be held in compliance with GDPR regulations. Cardiff University is the data controller and Matt Cooper is the data protection officer (inforequest@cardiff.ac.uk). The lawful basis for processing this information is public interest. This information is being collected by Lydia Rothwell-Scott.

The information on the consent form will be held securely and separately from the research information. Only the researcher will have access to this form and it will be destroyed after 10 years.

The research information you provide will be used for the purposes of research only and will be stored securely. Only Lydia Rothwell-Scott will have access to this information. The data will be confidentially stored using online questionnaire software and may be kept for a minimum of 10 years by Cardiff University once the study has been completed (as recommended by the Medical Research Council).

CONDITIONS

Skip to end of survey if *I do not consent to participate* is selected

Skip to end of block if *I consent to participate* is selected

Q1 What is your role?

- ALNCo/SENCo
- Headteacher
- Dual role headteacher/ALNCo
- Other (please specify)

Q2 Where in the UK is your school located?

- North East England
- North West England
- Yorkshire and the Humber
- West Midlands
- East Midlands
- South West England
- South East England

- East of England
- Greater London
- Northern Ireland
- North Scotland
- South Scotland
- East Scotland
- West Scotland
- Mid Scotland
- North Wales
- South Wales
- East Wales
- West Wales
- Mid Wales

Q3 Which of the following best describes your school?

- State Primary School
- State Secondary School
- Special School
- Pupil Referral Unit
- Specialist Resource Base
- Independent Primary School
- Independent Secondary School
- Nursery/Pre-School
- None of the above (please specify)

Q4 Does your school currently use animals in any way to support pupils?

- Yes
- No
- Unsure

CONDITIONS

Skip to Q5 if *Yes* Is Selected
 Skip to end of block if *No* Is Selected
 Skip to end of survey if *Unsure* Is Selected

Q5 What type of animal does your school use?

- Dogs
- Horses
- Cats
- Rabbits
- Other (please specify)

CONDITIONS

Skip destination

Q6 How many types of animal-assisted intervention does your school currently use?

- 1
- 2
- 3
- More than 3

Q7 Is the animal-assisted intervention that your school currently uses targeting a specific type of additional need? (eg a 'reading dog' to support pupils with specific literacy difficulties)

- Yes
- No (intervention is used to address several types of additional need)

CONDITIONS

Display this question if *How many types of animal-assisted intervention does your school currently use?* If 1 Is Selected

Q8 Does your school use the same intervention for different types of additional need?

- Yes
- No (different animal-assisted interventions are used for each type of additional need)

CONDITIONS

Display this question if *How many types of animal-assisted intervention does your school currently use?* If 1 Is Not Selected

Q9 What type of Additional Need does the animal-assisted intervention aim to address?

- Physical Needs (eg muscular dystrophy, multiple sclerosis)
- Developmental Needs (eg Down Syndrome, Autism Spectrum Disorder)
- Behavioural/Emotional Needs (eg Attention Deficit Hyperactivity Disorder, Anxiety)
- Sensory Impairments (eg visual or hearing impairment)
- Cognition and Learning Needs (eg dyslexia, impaired cognitive function)
- Other (please specify)

CONDITIONS

Display this question if *Is the animal-assisted intervention that your school currently uses targeting a specific type of additional need? (eg a 'reading dog' to support pupils with specific literacy difficulties)* If Yes Is Selected

Q10 What types of Additional Need does your school currently use the animal-assisted intervention to address? (please select all that apply)

- Physical Needs (eg muscular dystrophy, multiple sclerosis)
- Developmental Needs (eg Down Syndrome, Autism Spectrum Disorder)
- Behavioural/Emotional Needs (eg Attention Deficit Hyperactivity Disorder, Anxiety)
- Sensory Impairments (eg visual or hearing impairment)
- Cognition and Learning Needs (eg dyslexia, impaired cognitive function)
- Other (please specify)

CONDITIONS

Display this question if

Does your school use the same intervention for different types of additional need?

If Yes Is Selected

Or

Is the animal-assisted intervention that your school currently uses targeting a specific type of additional need? (eg a 'reading dog' to support pupils with specific literacy difficulties) if No (intervention is used to address several types of additional need) Is Selected

Q11 What types of Additional Needs does your school currently use the animal-assisted interventions to address? (please select all that apply)

- Physical Needs (eg muscular dystrophy, multiple sclerosis)
- Developmental Needs (eg Down Syndrome, Autism Spectrum Disorder)
- Behavioural/Emotional Needs (eg Attention Deficit Hyperactivity Disorder, Anxiety)
- Sensory Impairments (eg visual or hearing impairment)
- Cognition and Learning Needs (eg dyslexia, impaired cognitive function)
- Other (please specify)

CONDITIONS

Display this question if *Does your school use the same intervention for different types of additional need?* If No (different animal-assisted interventions are used for each type of additional need) Is Selected

Q12 In what area are animals in your school predominantly used to support pupils?

- Academic Progress
- Pupil Wellbeing
- To support pupil understanding generally within the curriculum
- Other (please specify)

Q13 Please provide information to detail how your school uses animals to contribute towards the wellbeing of pupils: (What does the intervention involve? What does the animal do? What do the pupils do?)

CONDITIONS

Display this question if *In what area are animals in your school predominantly used to support pupils?* If Pupil Wellbeing Is Selected

Q14 Please provide information to detail how your school uses animals to contribute towards the academic progress of pupils: (What does the intervention involve? What does the animal do? What do the pupils do?)

CONDITIONS

Display this question if *In what area are animals in your school predominantly used to support pupils?* If Academic Progress Is Selected

Q15 Please provide information to detail how your school uses animals to support pupils' understanding generally within the curriculum: (What does the intervention involve? What does the animal do? What do the pupils do?)

CONDITIONS

Display this question if *In what area are animals in your school predominantly used to support pupils?* If To support pupil understanding generally within the curriculum Is Selected

Q16 Do you use baseline or pre- and post- measures to assess the effectiveness of the animal-assisted interventions used in your school?

- Yes
- No
- Sometimes

Q17 What measures do you use?

CONDITIONS

Display this question if *Do you use baseline or pre- and post- measures to assess the effectiveness of the animal-assisted interventions used in your school?* If No Is Not Selected

Q18 How do you determine the effectiveness of the animal-assisted interventions used in your school?

CONDITIONS

Display this question if *Do you use baseline or pre- and post- measures to assess the effectiveness of the animal-assisted interventions used in your school?* If No Is Selected

Q19 What positive effects have been evidenced following the use of animal-assisted interventions in your school? (please select all that apply)

- Improved concentration of pupils
- Increase confidence of pupils
- Improved pupil wellbeing
- Improved academic performance
- Other (please specify)

Q20 How do you believe the animal-assisted interventions used in your school have benefited pupils?

Q21 Which (if any) of the following has your school found to be barriers to the use of animals to support pupils?

- Risk Assessment
- Cleanliness
- Allergies
- Parental Objection
- Pupil Objection
- Other (please specify)
- No barriers experienced

Q22 Has your school previously used animals in any way to support pupils?

CONDITIONS

Display this question if *Does your school currently use animals in any way to support pupils?* If No Is Selected

Skip to End of Block if Yes Is Not Selected

Q23 When was the last time animals were used to support pupils in your school?

- Within the past 12 months
- 1-2 years ago
- 2-5 years ago
- More than 5 years ago

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q24 What are the reasons why you no longer use animals in this way?

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q25 What type of animal did your school use?

- Dogs
- Horses
- Cats
- Rabbits
- Other (please specify)

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q26 What type of Additional Needs did your school previously use animal-assisted interventions to address? (please select all that apply)

- Physical Needs (eg muscular dystrophy, multiple sclerosis)
- Developmental Needs (eg Down Syndrome, Autism Spectrum Disorder)
- Behavioural/Emotional Needs (eg Attention Deficit Hyperactivity Disorder, Anxiety)
- Sensory Impairments (eg visual or hearing impairment)
- Cognition and Learning Needs (eg dyslexia, impaired cognitive function)
- Other (please specify)

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q27 In what area were animals in your school predominantly used to support pupils?

- Academic Progress
- Pupil Wellbeing
- To support pupil understanding generally within the curriculum
- Other (please specify)

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q28 Please provide information to detail how your school used animals to contribute towards the wellbeing of pupils: (What did the intervention involve? What did the animal do? What did the pupils do?)

CONDITIONS

Display this question if *In what area were animals in your school predominantly used to support pupils?* If Pupil Wellbeing Is Selected

Q29 Please provide information to detail how your school used animals to contribute towards the academic progress of pupils: (What did the intervention involve? What did the animal do? What did the pupils do?)

CONDITIONS

Display this question if *In what area were animals in your school predominantly used to support pupils?* If Academic Progress Is Selected

Q30 Please provide information to detail how your school used animals to support pupils' understanding generally within the curriculum: (What did the intervention involve? What did the animal do? What did the pupils do?)

CONDITIONS

Display this question if *In what area were animals in your school predominantly used to support pupils?* If To support pupil understanding generally within the curriculum Is Selected

Q31 Did you use baseline or pre- and post- measures to assess the effectiveness of the animal-assisted interventions used previously in your school?

- Yes
- No
- Sometimes

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q32 What measures did you use?

CONDITIONS

Display this question if *Did you use baseline or pre- and post- measures to assess the effectiveness of the animal-assisted interventions used previously in your school?* If Yes Is Selected

Q33 How did you determine the effectiveness of the animal-assisted interventions used in your school?

CONDITIONS

Display this question if *Did you use baseline or pre- and post- measures to assess the effectiveness of the animal-assisted interventions used previously in your school?* If No Is Selected

Q34 What positive effects were evidenced following the previous use of animal-assisted interventions in your school? (please select all that apply)

- Improved concentration of pupils
- Increase confidence of pupils
- Improved pupil wellbeing
- Improved academic performance
- Other (please specify)

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q35 How do you believe the animal-assisted interventions used previously in your school benefited pupils?

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q36 Which (if any) of the following did your school find to be barriers to the use of animals to support pupils?

- Risk Assessment
- Cleanliness
- Allergies
- Parental Objection
- Pupil Objection
- Other (please specify)
- No barriers experienced

CONDITIONS

Display this question if *Has your school previously used animals in any way to support pupils?* If Yes Is Selected

Q37 Which of the following best reflects your personal views on the use of animal-assisted interventions?

- Extremely positive
- Somewhat positive
- Neither positive nor negative
- Somewhat negative
- Extremely negative

Q38 Please provide additional information about the reason for your answer:

Q39 Which of the following do you feel best reflects your school's views on the use of animal-assisted interventions?

- Extremely positive
- Somewhat positive
- Neither positive nor negative
- Somewhat negative
- Extremely negative

Q40 Please provide additional information about the reason for your answer:

Q41 What type of Additional Needs do you think would be most effectively targeted by Animal-Assisted Interventions? (please drag the following options to rank from top to bottom)

- Physical Needs (eg muscular dystrophy, multiple sclerosis)
- Developmental Needs (eg Down Syndrome, Autism Spectrum Disorder)
- Behavioural/Emotional Needs (eg Attention Deficit Hyperactivity Disorder, Anxiety)
- Sensory Impairments (eg visual or hearing impairment)
- Cognition and Learning Needs (eg dyslexia, impaired cognitive function)
- Other (please specify)

Q42 In which area do you believe animals could be most effectively used to support pupils?

- Academic Progress
- Pupil Wellbeing
- To support pupil understanding generally within the curriculum
- Other (please specify)

Q43 Your responses indicate that you may be eligible to take part in the second phase of this study. Are you happy for me to contact you with additional details about the second phase?

- Yes

- No

CONDITIONS

Display this question if

Does your school currently use animals in any way to support pupils? If Yes Is Selected

And

What type of animal does your school use? If Dogs Is Selected

Q44 If you would be happy for me to contact you to provide you with additional details about the second phase, please enter your email address below:

CONDITIONS

Display this question if *Your responses indicate that you may be eligible to take part in the second phase of this study. Are you happy for me to contact you with additional details about the second phase?* If Yes Is Selected

Appendix D – Semi-structured interview schedule (Phase 2)

Further prompt questions are in italics

Thank you for agreeing to take part in my thesis research and for completing my questionnaire over the summer.

The information from the questionnaire helped me to get a brief understanding of the types of animal-assisted interventions that schools are using but now it would be really useful if I could ask you a few questions to follow up on the information I already have to find out a bit more about how your school is using dogs.

1. My first questions are about how you currently use dogs to support your pupils: [I understand you currently use dogs to..... Could you tell me a little more about this intervention?]
 - a. *How did this intervention first come about? Why dogs? How did you select the dogs?*
 - b. *What does the intervention involve? (how long, how frequent, activities involved?)*
 - c. *What does the dog do?*
 - d. *What do the pupils do?*
 - e. *How are pupils selected to receive this intervention?*
 - f. *How is the effectiveness measured? Do you use any scales/checklists/other measures? Do you evidence the effectiveness in another way?*

2. Does your schools use dogs [in this intervention] to specifically contribute towards the wellbeing of pupils? *[or is there an alternate main focus of this intervention]*
3. Does your school use dogs [in this intervention] to specifically support pupils academically? *[or is there an alternate main focus of this intervention]*
4. What do you perceive the benefits to be of using dogs in this way?
 - a. *How would you say the interventions you currently run impact upon pupils? What do you notice about the pupils' (behaviour, attendance, progress, engagement, confidence, self-esteem etc)*
 - b. *In addition to [the measures you use/what we've already discussed], do you see any other benefits for pupils? How else do you feel this intervention helps pupils? [Do you feel the intervention helps their wellbeing? Academic progress? Or helps in another way?]*
 - c. *What do staff think of the intervention?*
 - d. *How does the cost of this intervention compare to other interventions available?*
5. What do you perceive the barriers to be of the therapeutic use of dogs in schools?
 - a. *Risk assessment?*
 - b. *Cleanliness?*
 - c. *Allergies?*
 - d. *What do staff think about the interventions?*
 - e. *What do parents think about the interventions?*
 - f. *What do pupils think about the interventions?*
 - g. *How does the cost compare to other interventions available?*
6. How does your school try to overcome these barriers?
7. Is there anything I haven't asked about these interventions that you think it's important that I should know?

Appendix E – Participant Information Sheet (Recruitment Phase)

School of Psychology, Cardiff University

Information Sheet

You are invited to take part in a study to explore ALNCos' perceptions of the use of animals to support pupils. This study will involve completing a short questionnaire designed to seek ALNCos' perceptions of the therapeutic use of animals in schools. This questionnaire would also seek to identify schools that currently use dogs to support their pupils, in order to identify possible participants for inclusion in the second phase of the study.

I anticipate that the questionnaire would take around 10 minutes to complete. The data collected would be kept confidentially using online questionnaire software. This data may be kept for a minimum of 10 years by Cardiff University once the study has been completed (as recommended by the Medical Research Council).

At the end of the study you will be provided with additional information about the study.

Your participation is voluntary, and information will be held confidentially using online questionnaire software. You have the right to withdraw at any time before the questionnaires are submitted using the online questionnaire software, when responses will be untraceable to participants.

This study has been reviewed and ethically approved by School of Psychology Research Ethics Committee.

If you have any questions or concerns, then please contact either me or my research supervisor, Dr Kyla Honey, on the email addresses below:

Kyla Honey (Research Supervisor) HoneyK1@cardiff.ac.uk

School of Psychology
Cardiff University
Tower Building
70 Park Place
Cardiff
CF10 3AT

Lydia Rothwell-Scott (Researcher) RothwellLF@cardiff.ac.uk

School of Psychology
Cardiff University
Tower Building
70 Park Place
Cardiff
CF10 3AT

Appendix F – Participant Consent Form (Recruitment Phase)

School of Psychology, Cardiff University

An exploration into the effectiveness of the use of dogs in mainstream educational settings

Consent Form – Confidential data

Please tick the boxes when you have read and understood the following statements:

I understand this study will involve completing a short questionnaire. I understand that I will be asked a few questions about my opinions on the therapeutic use of animals in schools.

I understand that the personal data will be processed in accordance with GDPR regulations (see privacy statement below).

I understand that the data collected will be kept confidentially using online questionnaire software, and then kept for a minimum of 10 years by Cardiff University once the study has been completed (as recommended by the Medical Research Council).

I, _____ (NAME) consent to the proposed study being conducted by Lydia Rothwell-Scott, School of Psychology, Cardiff University with the supervision of Dr Kyla Honey.

Signed: _____

Date: _____

Privacy Notice:

The information provided will be held in compliance with GDPR regulations. Cardiff University is the data controller and Matt Cooper is the data protection officer (inforequest@cardiff.ac.uk). The lawful basis for processing this information is public interest. This information is being collected by Lydia Rothwell-Scott.

The information on the consent form will be held securely and separately from the research information. Only the researcher will have access to this form and it will be destroyed after 10 years.

The research information you provide will be used for the purposes of research only and will be stored securely. Only Lydia Rothwell-Scott will have access to this information. The data will be confidentially stored using online questionnaire software and may be kept for a minimum of 10 years by Cardiff University once the study has been completed (as recommended by the Medical Research Council).

Appendix G – Participant Debrief Sheet (Recruitment Phase)

School of Psychology, Cardiff University

An exploration into the effectiveness of the use of dogs in mainstream educational settings

Debrief Form

Thank you for taking part in this study. The aim of the questionnaire was to explore ALNCoS' perceptions of the therapeutic use of animals in schools. I was also interested in whether schools are currently using animals to support their pupils, or whether they have done so in the past, in order to identify schools who may be eligible to participate in the second part of this study.

The findings will be written up and submitted to Cardiff University as part of my doctorate thesis and may be used in presentations and published in a journal. Please be assured that the information will only be used in an entirely anonymous format. If you would like a summary of the findings this can be made available to you.

You can withdraw your data from the study up until the point the data is submitted onto online questionnaire software at which point responses will be untraceable to participants. You can do this by contacting the researcher. You are free to discuss any concerns with the researcher, Lydia Rothwell-Scott, or the supervisor, Dr Kyla Honey.

If you feel that participation has raised difficult feelings for you, you could discuss these with your Headteacher.

The personal data will be processed in accordance with GDPR regulations (see privacy statement below).

Name of Researchers:

Lydia Rothwell-Scott

School of Psychology
Cardiff University
Tower Building
Park Place
Cardiff
CF10 3AT

Email: rothwellf@cardiff.ac.uk

Name of Supervisor

Dr Kyla Honey

School of Psychology
Cardiff University
Tower Building
70 Park Place
Cardiff
CF10 3AT

Email: HoneyK1@cardiff.ac.uk

For further complaints please contact the Ethics Committee:

Secretary of the Ethics Committee
School of Psychology
Cardiff University
Tower Building
70 Park Place
Cardiff
CF10 3AT

Tel: 029 2087 0360

Email: psychethics@cardiff.ac.uk

Privacy Notice:

The information provided will be held in compliance with GDPR regulations. Cardiff University is the data controller and Matt Cooper is the data protection officer (inforequest@cardiff.ac.uk). The lawful basis for processing this information is public interest. This information is being collected by Lydia Rothwell-Scott.

The information on the consent form will be held securely and separately from the research information. Only the researcher will have access to this form and it will be destroyed after 10 years.

The research information you provide will be used for the purposes of research only and will be stored securely. Only Lydia Rothwell-Scott will have access to this information. The data will be confidentially stored using online questionnaire software and may be kept for a minimum of 10 years by Cardiff University once the study has been completed (as recommended by the Medical Research Council).

Appendix H – Participant Information Sheet (Phase 2)

School of Psychology, Cardiff University
Information Sheet

Dear ALNCo,

You are invited to take part in a study to explore how schools are using dogs to support their pupils. The aim of this study is to investigate how schools are using dogs to contribute towards the wellbeing of their pupils, as well as how schools are using dogs to support pupils academically. This study will also seek to explore the perceived benefits and barriers of using animals in this way, in order to investigate how these barriers could be overcome.

This study will involve taking part in a short interview about the therapeutic use of dogs in your school, via a secure Zoom account. The interview will be recorded using the record function on Zoom and will take approximately 20-30 minutes. At the end of the study you will be provided with additional information about the study.

You are also being asked to provide me with any information used to measure how effective these interventions are for children's wellbeing and academic progress. I may also use a measure to assess the effectiveness of these interventions.

Your participation is voluntary, and information will be held confidentially until it is anonymously transcribed, at which point the original recordings will be deleted. The

interviews would be transcribed within two months of the interviews being completed. You have the right to withdraw at any time before the interviews are transcribed, when responses will be untraceable to participants.

This study has been reviewed and ethically approved by School of Psychology Research Ethics Committee.

If you have any questions or concerns, then please contact either me or my research supervisor, Dr Kyla Honey, on the email addresses below:

Kyla Honey (Research Supervisor) HoneyK1@cardiff.ac.uk School of Psychology
Cardiff University
Tower Building
70 Park Place
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CF10 3AT

Lydia Rothwell-Scott (Researcher) rothwelllf@cardiff.ac.uk School of Psychology
Cardiff University
Tower Building
70 Park Place
Cardiff
CF10 3AT

Appendix I - Participant Consent Form (Phase 2)

School of Psychology, Cardiff University

An exploration into the effectiveness of the use of dogs in mainstream educational settings

Consent Form – Confidential data

Please tick the boxes when you have read and understood the following statements:

I understand that taking part in this study will involve completing a short interview about the therapeutic use of dogs in our school, via a secure Zoom account. This will require up to 30 minutes of my time.

I understand that school has been asked to share data used to assess the effectiveness of these interventions

I understand that the researcher may use pre- and post- measures to assess the effectiveness of these interventions.

I understand that taking part is entirely voluntary and that I can withdraw from the study at any time without giving a reason.

I also understand that I can withdraw my data from the study up until the point that the interviews have been transcribed (written up). I can do this by contacting the researcher.

I understand that I am free to ask any questions at any time. I am free to withdraw or discuss my concerns with the researcher, Lydia Rothwell-Scott, or the supervisor, Dr Kyla Honey.

I understand that the personal data will be processed in accordance with GDPR regulations (see privacy statement below).

I understand that at the end of the study I will be provided with additional information about the study.

I, _____(NAME) consent to take part in the study conducted by *Lydia Rothwell-Scott*, School of Psychology, Cardiff University with the supervision of *Dr Kyla Honey*.

Signed: _____

Date: _____

Privacy Notice:

The information provided will be held in compliance with GDPR regulations. Cardiff University is the data controller and Matt Cooper is the data protection officer (inforequest@cardiff.ac.uk). The lawful basis for processing this information is public interest. This information is being collected by *Lydia Rothwell-Scott*.

The information on the consent form will be held securely and separately from the research information. Only the researcher will have access to this form and it will be destroyed after 10 years.

The research information you provide will be used for the purposes of research only and will be stored securely. Only Lydia Rothwell-Scott will have access to this information. Within approximately two months of the final interview, the data will be anonymously transcribed (any identifying elements removed) and this anonymous information may be kept for a minimum of 10 years by Cardiff University once the study has been completed (as recommended by the Medical Research Council).

Appendix J – Participant Debrief Form (Phase 2)

School of Psychology, Cardiff University

An exploration into the effectiveness of the use of dogs in mainstream educational settings

Debrief Form

Thank you for taking part in this study. The aim of the study was to explore how schools are using dogs to contribute towards the wellbeing of their pupils, as well as how schools are using dogs to support pupils academically. I was interested in whether these types of animal-assisted interventions had a statistically significant effect on the wellbeing or academic progress of pupils. I was also interested in the perceived benefits and barriers of using animals in this way, in order to explore how these barriers could be overcome.

The findings will be written up and submitted to Cardiff University as part of my doctorate thesis and may be used in presentations and published in a journal. Please be assured that the information will only be used in an entirely anonymous format. If you would like a summary of the findings this can be made available to you.

You can withdraw your data from the study up until the point the data is transcribed and made anonymous. You can do this by contacting the researcher. You are free to discuss any concerns with the researcher, Lydia Rothwell-Scott, or the supervisor, Dr Kyla Honey.

If you feel that participation has raised difficult feelings for you, you could discuss these with your Headteacher.

The personal data will be processed in accordance with GDPR regulations (see privacy statement below).

Name of Researchers:

Lydia Rothwell-Scott

School of Psychology
Cardiff University
Tower Building
Park Place
Cardiff
CF10 3AT

Email: rothwelllf@cardiff.ac.uk

Name of Supervisor

Dr Kyla Honey

School of Psychology
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CF10 3AT

Email: HoneyK1@cardiff.ac.uk

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The information on the consent form will be held securely and separately from the research information. Only the researcher will have access to this form and it will be destroyed after 10 years.

The research information you provide will be used for the purposes of research only and will be stored securely. Only Lydia Rothwell-Scott will have access to this information. Within approximately two months of the final interview, the data will be anonymously transcribed (any identifying elements removed) and this anonymous information may be kept for a minimum of 10 years by Cardiff University once the study has been completed (as recommended by the Medical Research Council).

Appendix K – Example Transcript

Interview Transcript 1

Researcher: There we go, OK, I think we're all ready to go, so I've had a look through the questionnaire data. So thank you so much for completing that over the summer and that's sort of helped me get a bit of an understanding about the types of interventions that you've got going on. But I thought we could just use today as an opportunity for me to hear in more detail about the sorts of things that are going on and how they're working and what you're finding, just to get a bit more detail I think, and just give to give you the opportunity to give me some more information about the things that are going on. So the first questions I've got sort of relate to how you're currently using the dogs to support pupils. So from what I read it sort of, it sounds like you're using a specific sort of literacy type intervention with pupils. So would you just tell me a little bit more about that intervention?

P1: Yeah, so we have a therapy dog who comes into school one afternoon a week. Her owner, just to give you a little bit of background, her owner is an ex headteacher. OK, so primary headteacher as well. So obviously very familiar and aware of sort of interventions and SEN and moving children forward of all abilities and attainment. So (.) it was actually his wife who is our specialist teacher who comes in to do dyslexia screening, and

if we if we got any concerns about students, who comes in and assesses them, once a [Local Authority] term, which is 6 times a year. And she'd said that they'd just started their dog as a therapy dog and would we be interested as a, you know, as a sort of practice school if you like, so we accepted it and it's been absolutely amazing. So the (.) main focus has been working with a group of children who really struggled with reading, with writing, with language. A couple of those students as well have also got social and emotional issues which impacts significantly within the classroom as well. (.) Urm and so we'd identified who we thought would benefit most from coming out in wave 3, so one to one, with Bella the therapy dog and the owner. Just to do some reading and writing and some general chatting to see how it went and that that worked so well that from that point, we got to that October half term and from that point thought we can actually we can start to do more bespoke interventions. So one of the children has got a real problem with handwriting and perceived dysgraphia, but that was ruled out. So Bella would sit there while the child would have the handwriting session with (.) with ((pause)) with (.) the owner, the ex Headteacher, who was able to guide and support. And the children don't see it as learning they just see it as going and talking to Bella. So even talking about their own work they don't see it as an intervention at all. I mean, it's just (.) it's just blossomed from there, so I think I think we're very fortunate in the fact that because Bella's owner is an ex-head and he's more than happy to either work within it (.) with our (.) with our remit, with the interventions that we are asking him to do, or we can pick up on something and run with it. We we've almost got the best of both worlds with Bella and the owner.

Researcher: Yeah brilliant. OK so that's how it started. So is the dog, did you say it was a specifically trained therapy animal?

P1: Yes, yeah. So she comes into our school one afternoon a week. Um, the owner was then taking her into other schools from January until March when Covid obviously started. Yeah, but she also goes into sort of old people's homes and into care homes and into Hospices is as well. So she's got all of the certificates to prove that she's

Appendix L - Transcription Notation System

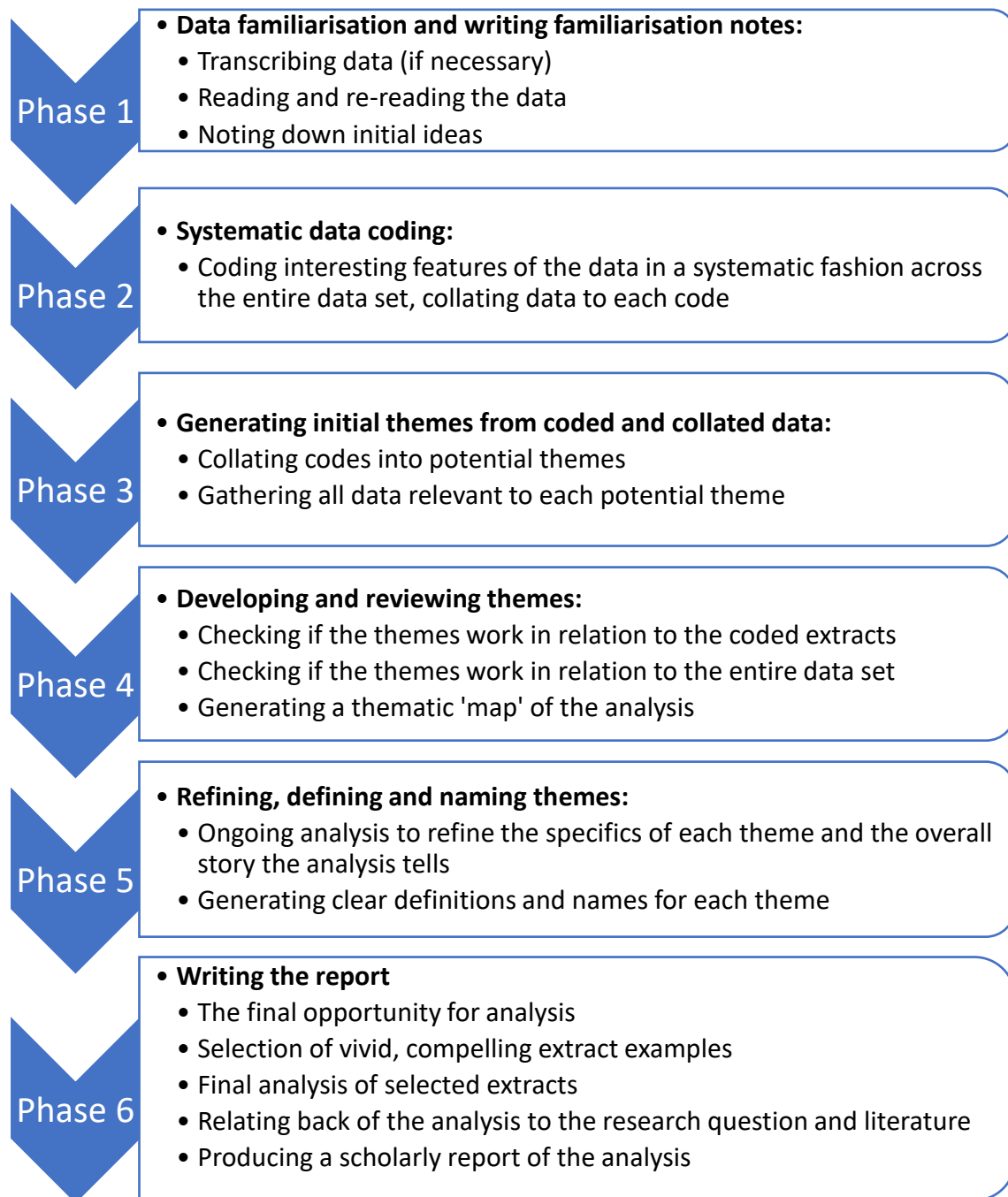
The following transcription notation system for orthographic transcription was used, as described by Braun and Clarke (2013) (adapted from Jefferson, 2004):

Notation Used	Meaning
Interviewer: or P1:	Speaker
((pause))	A significant pause (a few seconds or more)
(.)	A short pause (a second or less)
((laughs))	Speaker laughing
Erm/Umm	Non-verbal utterances

[name of school]	Identifying information removed to ensure anonymity
Bella/Teddy/Milo/Buddy/Alfie/Poppy	Pseudonym dog names used to ensure anonymity

Appendix M - Braun and Clarke (2006, 2020)'s six stage Thematic Analysis

Braun and Clarke's Six Phase Process for Thematic Analysis (2006, pg. 87) (adapted in 2020)



Appendix N - Example of Coding

Interview Transcript 1

Researcher: There we go, OK, I think we're all ready to go, so I've had a look through the questionnaire data. So thank you so much for completing that over the summer and that's sort of helped me get a bit of an understanding about the types of interventions that you've got going on. But I thought we could just use today as an opportunity for me to hear in more detail about the sorts of things that are going on and how they're working and what you're finding, just to get a bit more detail I think, and just give you the opportunity to give me some more information about the things that are going on. So the first questions I've got sort of relate to how you're currently using the dogs to support pupils. So from what I read it sort of, it sounds like you're using a specific sort of literacy type intervention with pupils. So would you just tell me a little bit more about that intervention?

ALNCo 1: Yeah, so we have a therapy dog who comes into school one afternoon a week. Her owner, just to give you a little bit of background, her owner is an ex headteacher. OK, so primary headteacher as well. So obviously very familiar and aware of sort of interventions and SEN and moving children forward of all abilities and attainment. So it was actually his wife who is our specialist teacher who comes in to do dyslexia screening, and if we if we got any concerns about students, who comes in and assesses them, once a Lincolnshire term, which is 6 times a year. And she'd said that they'd just started their dog as a therapy dog and would we be interested as a, you know, as a sort of practice school if you like, so we accepted it and it's been absolutely amazing. So the the main focus has been working with a group of children who really struggled with reading, with writing, with language. A couple of those students as well have also got social and emotional issues which impacts significantly within the classroom as well. Um and so we'd identified who we thought would benefit most from coming out in wave 3, so one to one, with Polly the therapy dog and the owner. Just to do some reading and writing and some general chatting to see how it went and that that worked so well that from that point, we got to that October half term, and from that point thought we can actually we can start to do more bespoke interventions. So one of the children has got a real problem with handwriting and perceived dysgraphia, but that was ruled out. So Polly would sit there while the child would have the handwriting session with with...with...the owner, the ex Headteacher, who was able to guide and support. And the children don't see it as learning they just see it as going and talking to Polly. So even talking about their own work they don't see it as an intervention at all. I mean, it's just it's just blossom from there, so I think I think we're very fortunate in the fact that because Polly's owner is an ex head and he's more than happy to either work within it with our with our remit, with the interventions that we are asking him to do, or we can pick up on something and run with it. We we've almost got the best of both worlds with Polly and the owner.

Researcher: Yeah brilliant. OK so that's how it started. So is the dog, did you say it was a specifically trained therapy animal?

ALNCo 1: Yes, yeah. So she comes into our school one afternoon a week. Um, the owner was then taking her into other schools from January until March when Covid obviously started. Yeah, but she also goes into sort of all peoples homes and into care homes at an into Hospice is as well. So she's got all of the certificates to prove that she's

Legend:

- relationship
- reading/literacy
- walking the dog
- trust
- value for money
- wellbeing
- academic focus/impact
- knock-on effects on learning
- confidence
- Behavioural impact
- risk assessment
- fear of dogs
- complements classroom learning
- observations/terrors
- requests for it
- dogs temperament + training
- attendance
- Social/emotional
- anxiety
- lockdown
- chatting/talking
- don't see it as learning

Researcher: Would you say, would you say that was the original focus of the intervention? Was it to support pupils academically, or do you think originally it was more of a well-being sort of focus that then had an impact academically as a sort of as an aside?

ALNCo 1: I'd say initially we were looking at academic.

Researcher: Yeah

ALNCo 1: Because what we were so conscious of the fact that this group of SEN children, yes they were receiving quality first teaching and wave 2 and wave 3 intervention, but they could have always benefited from more. And it was 'when?' When did we fit it in? So originally it was very much academic, but actually within the first couple of weeks when we were getting the feedback and realizing that actually these are the quiet children who never say anything and are actually coming back into class, really bubbly, and were coming in on a Thursday morning 'cause they'd written Polly a letter and wanted to send it to her. We thought, actually, that this is now having a well-being, a social and emotional, side of things, and then, when the pupils in my class, when you know, sort of safeguarding concerns were raised and team around a child had to be started, we realized that actually for him, that's more of a priority than the academic. So that's when I had a conversation with with Polly's owner, and obviously without divulging any of the safeguarding to him, that we were able to come up with a plan and and, and you know started to look at social stories and, and you know Polly's owner sort of modeling positive male behavior. And then sort of, talking about his own experiences growing up, just to, sort of make this pupil realize that what he thought was the norm actually isn't.

Researcher: Yeah.

ALNCo 1: And so very, very quickly we realized that that actually there were those two levels of support that that were being given.

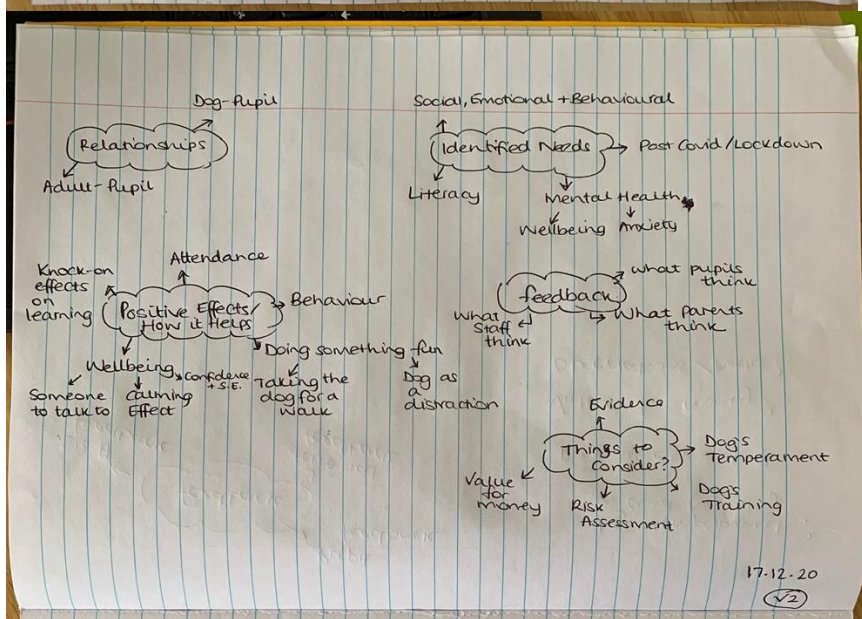
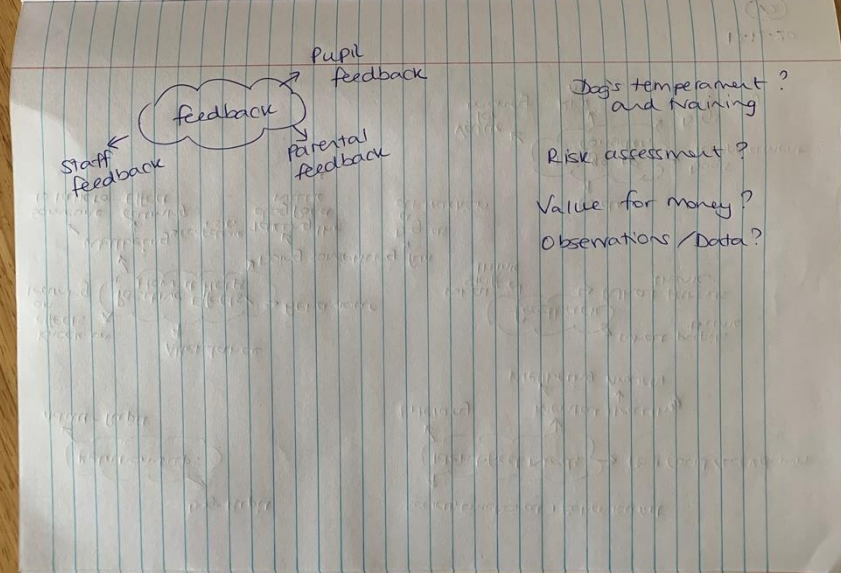
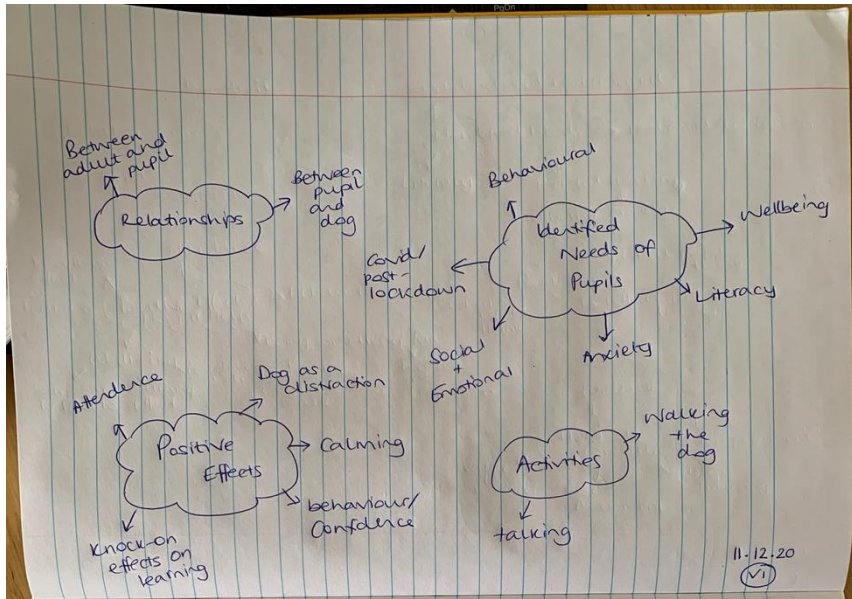
Researcher: Yeah

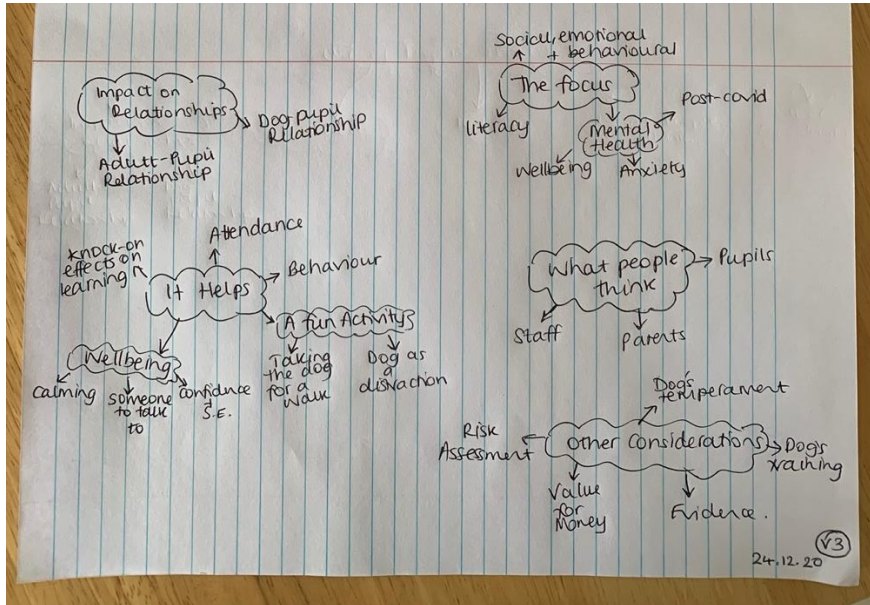
ALNCo 1: And I think it was the, the sort of, the social and emotional: once that was being raised and you could then see the knock-on effect with with the learning because ultimately the end of the day happy children are the most effective learners

Researcher: Yeah, definitely. So, so would you say going forward you view it very much as a, as a sort of two-pronged attack almost? So it's, it's focusing on academic progress, but it's got that very clear impact on their, sort of, well-being as well?

ALNCo 1: Yeah, yeah, I certainly want that to continue. And actually looking at looking at the SEN register that we've got at the moment we've, we've got, I think in the past we've always had predominantly cognition and learning, whereas now looking, we've got one or two children coming through that I think would need to go on with the social, emotional, mental health element of it. So I think that is going to have to be quite a large focus. And the, the foundation stage teacher is talking to me this afternoon. She's she's got quite a few children with significant language issues, you know, they're getting frustrated so behavior is is now, even second week in, she can tell, so I think that's something that we will need to look at very carefully. And if we

Appendix O – Development of Themes and S





Appendix P – Ethical Approval from the School of Psychology Research Ethics Committee



psychethics

Thu 18/06/2020 16:00

To: Lydia Rothwell-Scott

Cc: Kyla Honey



Dear Lydia,

The Ethics Committee has considered the amendment to your PG project proposal: An exploration into the effectiveness of the use of dogs in mainstream educational settings (EC.20.03.10.5976RA).

The amendment has been approved.

Please note that if any changes are made to the above project then you must notify the Ethics Committee.

Best wishes,
Adam Hammond

School of Psychology Research Ethics Committee

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Appendix Q – Full list of quotes for each theme

Theme	Subtheme	Sub Sub Theme	Quotes
Impact on relationships	Adult and pupil		"It gives me [headteacher] like a bit of a relationship with the children" P2
			"He's a little boy that wouldn't have spoken to me [headteacher] before" P2
			"It helps her [headteacher] as well, get to know the children, especially the new children who have arrived" P5
			"I think without Alfie a handful of children just wouldn't open up and I think their meltdowns would be bigger" P5
			"He works basically on a rapport-building sort of situation" P4
			"The children feel very relaxed with him, um, you know, they feel they can trust him. He's building that trust with them" P4
			"You don't tell someone something unless you do trust them" P4
			"It gave us a talking point. Something else to focus on" P6
	Dog and pupil		"Children trust them don't they" P2
			"The children who have got social emotional difficulties...what we see is that they really engage with Milo. They love playing with him" P3
			"He'll probably be with Milo for a year actually because he's got that really strong relationship" P3
			"If a child has a positive relationship with a pet or an animal before the age of eight, they are less likely to have a criminal record when they grow up" P3
			"If you've had a stressful day or if you're going through a difficult period in life, bereavement, or you know, someone really sick or anything in the family or a friend, how can you not then like allow your barriers to be broken down when you've got this like little face that's just like...it's incredible" P4
The focus	Social, emotional and behavioural		"We have deliberately targeted those children who...have behaviour challenges" P3
			"We've got a couple of [pupils] who are there for like behaviour" P4

	<p>"A couple of those students as well have got social and emotional issues" P1</p> <p>"Whereas now, their hands are up, they're chatting, at break times and lunch times...they're far more social, you know, and are mixing with people" P1</p> <p>"It's also the social and emotional elements as well" P1</p> <p>"We did have one child with...social emotional needs...so we were able to sort some social stories" P1</p> <p>"And again, the social side of that has just been phenomenal" P1</p> <p>"These are the quiet children who never say anything and are actually coming back into class really bubbly..." P1</p> <p>"Transformed his relationships with his peers" P3</p> <p>"His friendships have improved" P3</p> <p>"He's used when the children are very upset and won't communicate" P5</p> <p>"Some kids are just not taught how to...how to talk about their feelings" P4</p>
Literacy	<p>"Do some reading and writing" P1</p> <p>"Working with a group of children who really struggle with reading, and writing, with language" P1</p> <p>"One of the children has got a real problem with handwriting" P1</p> <p>"Other classes tend to do reading dogs" P1</p> <p>"But they've got a reading book for pleasure as well, and they will read to Bella, or they will read to Bella's owner, or he will read to them" P1</p> <p>"It's English, it's language, that was the main focus...with the English, you know, with the reading and the writing and the spelling...that was our main priority" P1</p> <p>"Focus on reluctant readers and have a group of readers" P2</p> <p>"One of the ways is to listen to them read" P3</p> <p>"For those children that Milo has listened to read who wasn't really, they weren't reading before" P3</p> <p>"We want him to become like a reading buddy for some of our reluctant readers" P5</p> <p>"It really worked with those children that were struggling with reading" P6</p>

		"I'd actually really like to do urm <i>Reading to Dogs</i> with her" P6
Wellbeing/Mental Health?	Wellbeing	"This is now having a wellbeing (.) side of things" P1
		"It's all about wellbeing isn't it" P2
		"it's that whole wellbeing, you know" P2
		"Our HLTA who runs all our Nurture sessions, she'll be doing some sessions with Alfie" P5
		"We talked a little bit about ACES...we've got children here who again have got a range of different ACES" P4
		"Some have got really quite graphically horrendous backgrounds, trauma ((pause)) there's some with like domestic abuse" P4
		"You wouldn't believe how much a dog improves your mood. It's just unconditional love, loyalty" P4
		"But there's something that's still there and they feel like they need some pastoral support" P4
		"If you think of it positively contributing to a young person's mental health and their wellbeing" P4
		"Is there a need for wellbeing and sort of money to be put into wellbeing? Yes." P4
		"I think if we don't start to sort this mental health and wellbeing...these issues out now" P4
		"It benefits their wellbeing" P6
		Anxiety
	"I suppose it comes back to anxiety" P2	
	"Then using the dog in that situation just to calm it" P2	
	"We have deliberately targeted those children who are highly anxious or stressed" P3	
	"Maybe someone's struggling with some anxiety" P4	
	Post-Covid	"And then there's general sort of anxiety" P4
		"We've had a lot of incidents over the Covid when the school was locked down there was lots of incidents with children in the wider families" P5

		<p>"We've given them a sense of things have changed and the change is positive because look who we've got who's arrived" P5</p> <p>"I think it's helped them settle back in" P5</p> <p>"I find that some of the children are slowly getting their relationship back with us. But some of the children, there's still that block because they don't quite know us again as we were" P5</p> <p>"Because of Covid, now [school-based counsellors] are doing telephone appointments....[head of programme] is coming in, not only is he coming in so you get to talk to someone face-to-face...on top of that he's bringing his dog" P4</p> <p>"I think you know in the future especially after what this what 2020 has done to everybody, adults and young children alike" P4</p> <p>"Particularly after what you know you know a really difficult (.) difficult year this has been" P4</p> <p>"We've had a few children that were COVID, urm, were quite anxious after COVID and they, urm, they used to come in and just sit with her" P6</p>
It helps	Attendance	<p>"One [pupil] is struggling to come in and again he is Teddy is bringing her in" P2</p> <p>"Coming into school isn't enough, they need something else that sort of encourages them and wants you know to be there" P2</p> <p>"He brings in the children each year group at a time" P2</p> <p>"His attendance is good because he knows he's working with Milo" P3</p> <p>"He also helps with attendance" P5</p> <p>"We are having less latecomers" P5</p> <p>"We've got children who would normally be out of class more than in class" P5</p> <p>"I think it makes a difference if you've got a child who's reticent to come in" P6</p>

		"If we've got a child who doesn't particularly want to come into school, I might take her outside and they'll (.) they're more than happy usually to walk in with her" P6
	Knock-on effects on learning	"And you could see the knock-on effect with the learning" P1
		"They would just go and sit down and ask their working partner and then get on with the work" P1
		"it will be difficult to tease it out as an intervention that works by itself, cause you would hope that there's more things happening than just the child reading to the dog" P2
		"When working with Milo what it does is it relaxes them and it enables them to engage with their um front frontal lobe really their thinking brain" P3
		"There's less out-of-class time so obviously they are learning more within their classroom" P5
		"For some of them it will purely be reinforcing what's been going on in the class" P1
		"It's topping up what's going on in the classroom" P1
		"They are then able to transfer that across within their, in the work that they're doing" P1
		"Even they were beginning to make the connections" P1
		"When the child is having to do some prediction questions, the teacher will turn it around and say 'so, what would you tell Bella you think is going to happen next and why?" P1
	Behaviour	"It's transformed his behaviour" P3
		"His behaviour chart has now gone from being spiky to, you know, it's very rare occasions" P3
		"it's more to do with behaviour" P3
		"He's a good behaviour management tool as well" P3
		"And it's a general motivator" P5

		<p>"We find there are becoming less and less of 'so and so and so and so had a meltdown' or 'this happened'. It's getting less and less of what we're noticing" P5</p> <p>"We've seen already sort of positive changes like within behaviour records" P4</p> <p>"Once they had finished their spelling test, they used to sit down and pet her in turn and then go off to their class and it was a bit of a treat" P6</p>
A fun activity	Dog as a distraction	"He's a really good distraction because they're stroking Alfie and then it all comes out" P5
		"It's the dog that's the distraction. So they pet the dog, they, you know, you can imagine how excited they get, they let the dog lick their hands and whatnot" P4
		"They don't see it as work. They don't." P1
		"They don't believe that they're reading to an adult" P3
		"They have the confidence to talk to Milo, and of course what they're doing, they're reading to his owner" P3
	Taking dog for walk	"He also has a special walk with him at lunchtime" P2
		"He did his little lunchtime walk with five children" P2
		"They love the responsibility of being with him. They learn how to do tricks with him. They take him for a walk" P3
		"Children take it in turns to walk him. They are on a rota basis and this little group take him for a walk" P5
		"He has set walking times" P5
		"And they take it for a walk" P4
		"So the year 6s take her out at lunchtime and they'll walk around and it's a responsibility" P6
	Wellbeing	Calming
"He has a calming effect" P5		
"This is [now] the quietest class in the school" P3		

	<p>"It benefits their wellbeing" P6</p>	<p>Someone to talk to</p>	<p>"And some general chatting" P1</p> <p>"They can then sit and talk about it" P1</p> <p>"He spent 15 minutes talking to the two of them and actually he is identifying that he now needs to focus on the 1-to-1" P1</p> <p>"And then, sort of, talking about his own experiences growing up" P1</p> <p>"They get to go and talk and play with Bella" P1</p> <p>"Then talk it through" P2</p> <p>"They go down to a safe area where they can sit and talk to him" P4</p> <p>"It's more like they can tell him things if they want to" P4</p> <p>"And he just talks to them" P4</p>
		<p>Confidence and Self-Esteem</p>	<p>"The child um gains confidence" P2</p> <p>"It just gives them that inner confidence" P3</p> <p>"His self-esteem, his confidence is rising" P3</p> <p>"He's got that sense of responsibility as well so...and I think he's grown his resilience" P3</p> <p>"They have the confidence to talk to Milo" P3</p> <p>"We've given them a sense of responsibility" P3</p> <p>"Maybe someone's struggling with (.) some confidence" P4</p>
<p>What people think</p>	<p>Staff</p>		<p>"The way staff are so relaxed with him" P2</p> <p>"Most feedback to be honest was great" P4</p> <p>"They were like 'oh can we pat the dog? Can we have a session?'" P4</p> <p>"It's lovely to have positive staff feedback I think as well as the kids" P4</p> <p>"We've only got one [staff member] that's frightened of a dog" P5</p> <p>"I did have a member of staff sort of email me quite concerned that she that she did have a fear of dogs" P4</p> <p>"Lots of staff actually come in and (.) and pat her head and come and have a chat with her at different times. And I've had a</p>

			<p>particularly tough day, so I actually took her down the road for 10 minutes in the afternoon. Because I just needed a bit of a break from it. So it, it gives people that sort of break (.) chance to focus on something else from an adult point of view." P6</p> <p>"If they don't like dogs, they just keep their distance" P6</p>
	Parents		<p>"Parents approaching us and saying 'oh, can my child go? Can my child go?" P1</p> <p>"Parents want it" P1</p> <p>"The parents are very chatty about him and a lot of them come over and say 'oh we've heard so much about him can we come and meet him?'" P2</p> <p>"We haven't had any parents complain about him" P3</p> <p>"You get all sorts of feedback from parents. They really like him" P5</p> <p>"[parents said] 'oh my goodness that's amazing! Yes of course!" P4</p> <p>"[parents] loved the idea" P4</p>
	Pupils		<p>"The kids absolutely love it" P1</p> <p>"And already we've got children coming up and saying 'when can I go and read to Bella? When can I go and work with Bella?'" P1</p> <p>"It's like, 'oh, when's he in again next?'" P1</p> <p>"And he said, 'when can I go for that walk that you said?'" P2</p> <p>"There wasn't any child in the school who isn't happy to work with Milo" P3</p> <p>"And an hour later she came back in and she was absolutely bouncing, She was absolutely thrilled...and she was just like 'that was amazing! I can't wait for my other session! I can't wait to go again! I wanna go again! I wanna go every week!'" P4</p>
Other considerations	Dog's temperament		<p>"She's obviously the right temperament" P1</p> <p>"She's so placid and calm" P1</p>

		<p>"The vet's passed comment saying 'she'd make a perfect therapy dog" P1</p> <p>"She's so calm" P1</p> <p>"I know the breeder and right from him being born she looked for the one in the litter that...she knew what he needed to be able to do...she used to call him Mr Sensible" P2</p> <p>"I went for that breed because I knew it would be the one that could do the job" P2</p> <p>"He's quite calm and he just sits or lies down" P2</p> <p>"He does seem right for it" P2</p> <p>"He is so gentle and he senses if a child is upset and he will go to them and they will cuddle or pat him" P3</p> <p>"I think [training] it'll help along with his temperament as well...and he will I think as he gets older calm down as well" P5</p> <p>"But she'll sit in the cage. And really, you wouldn't know she (.) she was here" P6</p>
	Dog's training	<p>"She's got all of the certificates to prove that she's passed all of the necessary training" P1</p> <p>"He's got an assessment to check he's suitable" P2</p> <p>"And then we trained him to be a school dog" P3</p> <p>"He's a working dog. He's a therapy dog in school and that's how the children view him" P3</p> <p>"Obviously he's not trained yet" P5</p> <p>"[headteacher] is looking into training him that way to be a trauma dog" P5</p> <p>"There's a specific programme...he's got to be nine months to start, nine months to a year, so starting as soon as he hits that time" P5</p> <p>"The aim is to have her qualified and go through the training process with Pets as Therapy" P6</p>

	Risk assessment	<p>"You do have to take it very seriously when you plan to have a dog in school, you have to do in-depth research and make sure you've covered all the bases and that there's a good risk assessment and that you follow all the guidelines, you know" P3</p> <p>"We were very fortunate that Dogs Helping Kids helped us with the risk assessments" P3</p> <p>"Risk assessment wasn't a problem. It was done with help from another school who'd already had their dog" P5</p> <p>"In terms of barriers, there really wasn't really with the risk assessment" P4</p> <p>"So we have got a risk assessment on her" P6</p> <p>"I mean risk assessment is about managing (.) managing a situation...And as long as she's contained, we have (.) we have stair gates from the doors to my office so we can have the door open, but she's contained. And you know she's not allowed to just go and wander off around the school" P6</p>
	Value for money	<p>"He comes in free of charge" P1</p> <p>"We really are getting value for money" P1</p> <p>"When you look at it like that, yeah cost effective" P2</p> <p>"It's all undertaken by the owner, so no [no cost]" P5</p> <p>"It is quite cost effective" P5</p> <p>"We're paying for him and we want his services, you know, we want his expertise and we want him working with the children here" P4</p> <p>"It's relatively costly...but is it more than what you would pay for an average counselling session? Probably not, no" P4</p> <p>"We are still getting a very, very good deal" P4</p> <p>"We're not charging these children, obviously, and if the school can pay for a service where we know it's going to benefit those children and ultimately the mental health and the wellbeing of the children, why would we not pay for it?" P4</p>

		<p>"I think ultimately whatever the cost is, I think it's a service that's worth having" P4</p> <p>"I think sometimes it's worth having isn't it? Sometimes you pay for something and yeah if it's going to make that much of a difference some things are worth buying"</p> <p>"if...they didn't think it was going to make a difference to young peoples' lives and to their mental health and their wellbeing I really don't think they would have invested in it" P4</p> <p>"It is free to the school" P6</p>
	Evidence	<p>"It's predominantly through observations at the moment" P1</p> <p>"And there's observation sheets" P1</p> <p>"At the moment it is purely observational" P1</p> <p>"staff have had an awful lot of training and support on...observations and monitoring" P1</p> <p>"We do need to perhaps formalise the social emotional sort of levels of what we're observing" P1</p> <p>"I'd love any support on, sort of quantifying his effect because it is going to be hard to measure" P2</p> <p>"We can look at their reading progress scores as well, so there is tangible data there" P3</p> <p>"We keep running records on certain children" P5</p> <p>"[head of programme] will create his own report" P4</p> <p>"He basically will assess them...he'll ask them a series of questions that link to like sort of emotional wellbeing" P4</p> <p>"He will write half termly reports...just to like keep a log and keep a track on how those children are doing" P4</p> <p>"Those children that are there for like there for behaviour issues and sort of incidents we obviously monitor" P4</p>

			"I wish I sort of had maybe um a more solid maybe ground from the school's perspective really just to see like the overall progress" P4
			"We know it works, I definitely know it works but maybe having that arc of progress if you like you know and having just something I think maybe to show" P4
			"Pupils write testimonials" P4
			"There is definitely like evidence to support it" P4
			"I think evidence base I think that's definitely something we could it's something like we could we could work on definitely" P4