# Evaluation of the Roots of Empathy Programme by North Lanarkshire Psychological Service

# Acknowledgements

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# Executive Summary: Evaluation of the Roots of Empathy programme delivered in North Lanarkshire by Action for Children.

## About Roots of Empathy (What is it?)

Founded in Canada in 1996, Roots of Empathy (ROE) is a classroom based, social and emotional programme. It aims to promote emotional competence and development of empathy in primary school children. The programme is delivered by a trained ROE instructor and consists of nine themes which are delivered across the school year. The baby is central to the delivery of the ROE programme and is considered the 'teacher'. The instructor guides the class to observe and raise awareness of the baby's development, the relationship with their parent and subsequent attachment. In order to ensure all areas of the ROE curriculum are covered instructors are required to deliver certain aims within each lesson, which vary in content and quantity. The fidelity of the programme is essential to ROE to ensure that all children receive the maximum benefit from the programme.

## Evaluation of the Roots of Empathy programme (Why we did it?)

In Autumn 2010, Action for Children, one of the UK's largest charities, became the 'Lead Agency' for Roots of Empathy in Scotland and piloted the programme in partnership with North Lanarkshire Council, with funding from Scottish Government's Community Safety Unit. This was the first time the Roots of Empathy programme was delivered on mainland Britain. Following the positive feedback from the pilot year, Action for Children Scotland secured funding through the Early Years Early Action Fund from Inspiring Scotland in 2011 to roll out Roots of Empathy to an additional 15 areas across Scotland in partnership with Local Authority colleagues.

## Evaluation of the Roots of Empathy programme (What we did?)

ROE was introduced to schools in North Lanarkshire Council area in two Phases. In 2010, eight schools (Phase 1) were introduced to ROE and the following year nine schools (Phase 2) were introduced to the programme. The research evaluation of ROE in North Lanarkshire began in August 2011 with new classes in all schools (Phase 1 and 2) taking part (17 experimental schools, 19 classes and 17 control schools, 18 classes), with 785 participants. The programme was delivered by staff from Action for Children and North Lanarkshire Council.

At the beginning and end of the ROE programme in academic session 2011/2012 participants completed various questionnaires to assess a number of areas: Empathy, Prosocial Behaviour, Anger Management/Aggression, Wellbeing and Class Climate. Pupils also participated in a group task which examined Knowledge of Infant Development and Recognition of Emotions. Class teachers completed questionnaires measuring pupils' Prosocial Behaviours and Total Difficulties as well as their perception of class climate.

Video observations were carried out in three Phase 2 schools of differing deprivation levels. Groups of four pupils were observed five times throughout the ROE programme. Empathic, prosocial and aggressive behaviours were investigated for each child.

Programme fidelity was measured through ROE instructor diaries which recorded how complete aims were for each theme. Additionally, instructors recorded dates for each lesson and their comments on the diaries. ROE class teachers and Head Teachers were also asked for their comments on the programme and the research procedure. Social and emotional programmes which ROE and control schools were participating in throughout the school year were also recorded by class teachers as this may have had an impact on the results.

## Results (What did we find?)

Questionnaire data was initially analysed by Phase (Phase 1 & 2 together and Phase 1 and Phase 2 separately). Further analysis compared: Phase 1 vs. Phase 2 (Phase), P4 vs. P5 (Primary Stage), high deprivation vs. low deprivation (Deprivation Level), boys vs. girls (Gender) and having younger children in the household vs. being a lone child. Pupil data from the group task was analysed by coding into themes and comparing specific answers. Programme fidelity was measured: overall the average implementation rate for Phase 1 & 2 was 93%. Most instructors doubled up at least two lessons throughout the programme, with only two classes not having any combined lessons (Phase 1).

A positive impact was found in the following outcomes:

**Empathy:** Overall a positive impact was found for the ROE pupils who increased in Cognitive Empathy (distinction between oneself and another) and Emotional Empathy (feeling with another), as measured by pupil self reports, compared to the control pupils who decreased on these subscales. When Phases were analysed separately significant differences between ROE and control pupils were only found in Phase 2; ROE increased in Cognitive Empathy and Emotional Empathy and Sympathy compared to the control group who decreased on these subscales. Video observations (in Phase 2) also identified an increase in empathic behaviours.
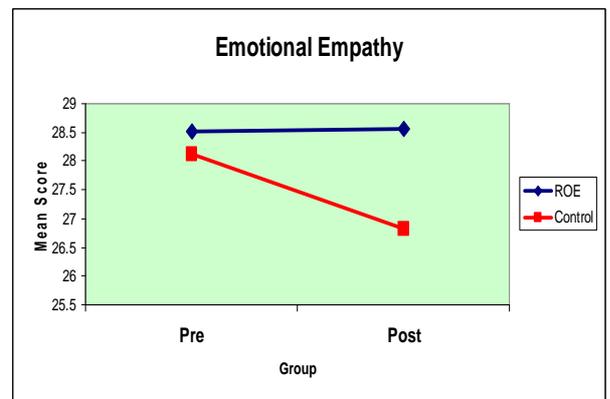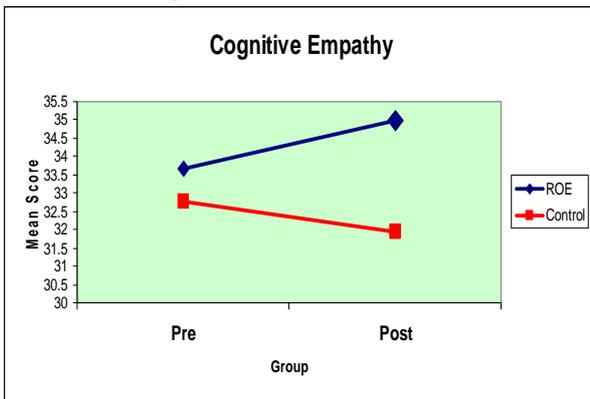




**Prosocial behaviour:** Overall a positive impact on teacher rated Prosocial Behaviour was found, with the ROE group increasing and the control group decreasing. These findings were also evident when Phases were examined individually.
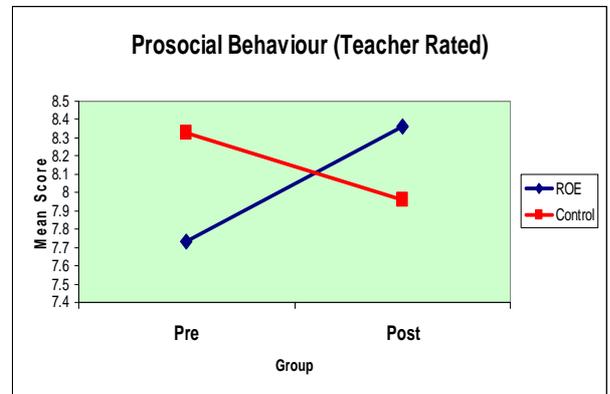


**Anger Management/Aggression:** Overall a positive impact was found for ROE pupils who decreased in Inhibition (turning emotion inward), as rated by pupil self report, compared to control pupils who increased. When Phases were analysed separately significant differences between ROE and control were only found in Phase 1, with ROE pupils showing a decrease in Inhibition and Emotion Regulation and control pupils showing an increase in both subscales. Video observations (in Phase 2) identified a decrease in aggressive behaviours. A positive impact was also found for ROE pupils in Total Difficulties (sum of Emotional Symptoms, Conduct Problems, Hyperactivity and Peer Problems subscales of the SDQ) as rated by teachers. Overall ROE pupils showed a decrease in Total Difficulties compared to control pupils who showed an increase. When analysed separately, only Phase 1 pupils showed a significant difference between ROE and control, with control pupils increasing significantly more in Total Difficulties.
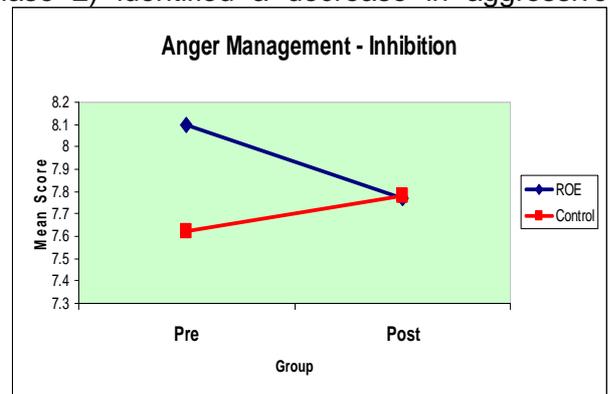


**Knowledge of Infant Development:** Across the three questions asked it was clear ROE pupils had a greater understanding of infant development, particularly around the specific teachings from the ROE lesson aims and outcomes. Differences were also noted in the language used by the ROE group compared to the control group which highlighted a greater

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understanding of knowledge of infant development. Specific learning from the ROE lesson aims and outcomes was displayed in responses given by the ROE group for each question:

"What are some ways that babies can get hurt?": lying a baby on its stomach to go to sleep, brain damage (from shaking), strangled in blind cord, baby gate, parent drinking when pregnant and smoking next to baby.

"What are some ways that babies can learn?": if you love them it will make their brain grow, baby can learn through ROE and using senses.

"What are some ways to keep babies safe?": don't shake a baby, keep baby with you, protect the baby's head, put to sleep on back, don't drink and don't smoke.

**Recognition of Emotions:** Across the two questions asked it was clear ROE pupils had a greater understanding of recognition of emotions particularly around the specific teachings from the ROE lesson aims and outcomes. Differences were also noted in the language used by the ROE group compared to the control group which highlighted a greater understanding of recognition of emotions. Specific learning from the ROE lesson aims and outcomes were displayed in responses given by the ROE group for each question:

"What are some reasons that this baby cries?": shaking a baby, mum taking drugs/alcohol when pregnant, needs love, needs a hug, needs put to sleep and changes to routine i.e. "different schedule (milk at different times)".

"What things can you do to help a baby who is crying?": soothing the baby, learning the baby's crying tones, giving the baby love, giving the baby a soft blanket ("transitional object"), routine ("using a timer to know when the baby's feed is due"),

**Further analysis** was conducted to compare: Phase 1 vs. Phase 2 (Phase), P4 vs. P5 (Primary Stage), high deprivation vs. low deprivation (Deprivation Level), boys vs. girls (Gender) and having younger children in the household vs. being a lone child. The following significant differences were found for the ROE group:
N.B. no significant differences were found for the comparison of pupils with younger children in the household vs. lone children.

**Phase:** With regards to Empathy Phase 2 pupils showed a significantly higher increase in Cognitive Empathy than Phase 1 pupils. They also showed an increase in Emotional Empathy and Sympathy compared to Phase 1 pupils who showed a decrease. Prosocial Behaviour increased significantly more in Phase 2 pupils than in Phase 1 pupils as rated by teachers. In relation to Anger Management: Emotion Regulation increased in Phase 2 pupils compared to Phase 1 pupils who showed a decrease. Phase 2 pupils showed a decrease in Total Difficulties compared to Phase 1 pupils who showed an increase as rated by teachers.

**Primary Stage:** For Prosocial Behaviour P4 pupils increased significantly more than P5 pupils as rated by teachers.

**Deprivation level:** For Empathy pupils in high deprivation areas increased in Emotional Empathy compared to pupils in low deprivation areas who decreased. For Prosocial Behaviour, pupils in low deprivation areas increased significantly more in self rated Altruism than pupils in high deprivation areas.

**Gender:** For Prosocial Behaviour boys increased significantly more than girls as rated by teachers.

## Conclusion

When implemented by Action for Children within a Scottish Local Authority context, ROE was found to have a positive impact on pupils taking part in the programme compared to pupils in the control group. Results are discussed with limitations in mind of real life setting, testing and programme implementation & delivery. Overall data showed ROE pupils to increase in Empathy (Cognitive & Emotional) and Prosocial Behaviour compared to control pupils who decreased on these outcomes. ROE pupils decreased in Inhibition and Total Difficulties and control pupils increased on these outcomes. Video observations showed an increase in empathic behaviours and a decrease in aggressive behaviours. Clear learning from the ROE programme aims was displayed in the ROE group for Knowledge of Infant Development and Recognition of Emotions. Significant results were not found for Wellbeing and Class Climate in this study. These results are discussed in relation to the current focus on wellbeing in North Lanarkshire and the issue of not being able to have a 'true' control group in real world research i.e. the control group were also participating in wellbeing programmes throughout the year.

The findings established from further analysis would suggest that the ROE programme had a more positive impact on Phase 2 pupils in this study who were in the first year of running the programme. It may be that the initial enthusiasm for the programme had declined in Phase 1 schools or that the ROE programme is more promoted in the first year of running which would support our findings. An additional possibility for the impact on Phase 2 pupils could be due to their instructors having just been trained and still under supervision. There was also a difference in age of pupils in Phase 1 and 2 with Phase 1 pupils, on average, being nearly a year older than Phase 2 pupils, suggesting that age may also have been a factor contributing to the differences found between Phase 1 and 2 pupils. Conclusions can not be drawn on primary stage, deprivation level or gender.

The current study's findings support and build on previous research of the ROE programme. To extend the current findings future research could explore potential direct links between the outcomes of empathy, prosocial behaviour and anger management/aggression; and whether knowledge of infant development and recognition of emotions are linked to these outcomes in relation to the ROE programme. Potential future research could further investigate the outcomes of empathy and class climate as findings have varied in previous research in these areas. Future research could replicate the further analysis investigated within our study to draw firmer conclusions. Finally future research could explore the effectiveness of ROE in comparison to other SEL programmes, e.g. a comparison of ROE and PAThS (another evidenced based SEL programme).

# Chapter 1: Introduction

Social and emotional learning programmes/interventions aim to promote children's social and emotional competence and wellbeing. Specifically social and emotional learning encourages the development of social awareness, self awareness, responsible decision making, relationship skills and self management. Weare and Gray (2003) state "*There is sound evidence from the literature, mainly from the U.S., that work on emotional and social competence and wellbeing has a wide range of educational and social benefits, including greater educational and work success, improved behaviour, increased inclusion, improved learning, greater social cohesion, increased social capital and improvements to mental health*" (p.6).

Other research has highlighted the importance of social and emotional competence and the role of programmes/interventions. "*The importance of the development of social and emotional competence in the school years cannot be overstated*" (Humphrey, Kalambouka, Wigelsworth, Lendrum, Lennie and Farrell, 2010, p. 514). Babad (2009) notes that school is the primary means by which children learn to be effective in the social world beyond the social framework of the family.

Social and emotional interventions can be targeted to children who are deemed to be 'at risk' of developing or already experiencing social and emotional difficulties, or universally implemented across an entire school. "*…educational interventions can be designed not only to deter children's problem behaviours but to foster children's strengths, positive behaviours and resiliency*" (Schonert-Reichl, Smith, Zaidman-Zait and Hertzman, 2012, p.2). Durlak, Weissberg, Dymnicki, Taylor & Schellinger (2011) conducted a meta-analysis of 213 school-based, universal social and emotional learning (SEL) programs involving 270,034 kindergarten through high school students. They found that compared to controls, SEL participants demonstrated significantly improved social and emotional skills, attitudes, behaviour, and academic performance that reflected an 11-percentile-point gain in achievement.

## 1.1 Background to Action for Children and North Lanarkshire Psychological Service

In Autumn 2010, Action for Children, one of the UK's largest charities, became the 'Lead Agency' for Roots of Empathy in Scotland and piloted the programme in partnership with North Lanarkshire Council, with funding from the Scottish Government's Community Safety Unit. This was the first time the Roots of Empathy Programme was delivered on mainland Britain. Following the positive feedback from the pilot year, Action for Children Scotland secured funding through the Early Years Early Action Fund from Inspiring Scotland in 2011 to roll out Roots of Empathy to an additional 15 areas across Scotland in partnership with Local Authority colleagues.

This evaluation conducted by North Lanarkshire Psychological Service aimed to look at the ROE Programme within a Scottish Local Authority. A quasi-experimental pre-post comparison was used to measure the impact of the ROE Programme in terms of the ROE Programme outcomes of empathy, prosocial behaviour, anger management/aggression, class climate, knowledge of infant development and recognition of emotions. This study also included a measure of wellbeing which has not previously been considered in ROE research.

## 1.2 Background to the Roots of Empathy (ROE) Programme

Roots of Empathy (ROE) is a classroom based, social and emotional programme founded in Canada in 1996. It aims to promote emotional competence and development of empathy in primary school children from Canadian Kindergarten to Grade 8 (Primary 1 to Primary 7 equivalent in Scotland) (Gordon, 2007).

The programme is delivered by a trained ROE instructor and consists of nine Themes which are delivered across the school year. Each Theme consists of a family visit, in which a mother and baby visit the class, and a visit before and after the family visit, in which the instructor reinforces the teachings from

the family visits. Through this process, ROE promotes the development of more caring and less aggressive behaviours while also increasing pupils' knowledge of infant development.

The baby is central to the delivery of the ROE Programme and is considered the 'teacher'. The instructor guides the class to notice and become aware of the baby's development, the relationship with their parent and subsequent attachment. In order to ensure all areas of the ROE curriculum are covered instructors are required to deliver certain aims within each lesson, which vary in content and quantity. (Roots of Empathy, 2012b).

The fidelity of the programme is essential to ROE to ensure that all children receive the maximum benefit from the programme.  Research results offer strong empirical support to the conclusion that the level of implementation affects the outcomes obtained in promotion and prevention programmes (Durlak & DuPre, 2008). Internal factors key to the adherence of the programme and crucial for high implementation fidelity include: frequency, duration of programme, adherence to the coverage and content of the programme and the identification of essential components (Carroll, Paterson, Wood, Booth, Rick and Balain, 2007). External factors which help to ensure high implementation fidelity include: staff recruitment, training, coaching and evaluation and support at both an organisational and local authority level (Fixsen, Blasé, Naoom and Wallace, 2009). These internal and external factors are considered and addressed by ROE Canada and the ROE Programme. On average it takes between two and four years to see the full impact of an evidence based programme like ROE (Fixsen et al., 2005, cited in Wiggins, Austerberry and Ward, 2012), as this time is needed to resolve any implementation issues. It is, therefore, important that all instructors meet the ROE criteria and are fully trained in the delivery of the programme, as this study is investigating the impact of ROE in its second full year of implementation in North Lanarkshire.

## 1.2.1 Roots of Empathy Programme Pillars

Roots of Empathy aims to develop self-awareness and self-management of a pupil's own emotions thereby fostering positive relationship skills (Roots of Empathy, N.D.). Roots of Empathy defines multiple programme 'Pillars' (Roots of Empathy, 2012d) which describe areas of social and emotional learning addressed by the programme. The pillars combine to aid positive social and emotional development within ROE classrooms. The programme pillars are linked with the outcomes of the current study: empathy, prosocial behaviour, anger management/aggression, wellbeing, class climate, knowledge of infant development and recognition of emotions.

**Emotional Literacy**
Pupils are shown how to describe and interpret a baby's actions, feelings and emotions through observing the baby's behaviour, which in turn allows pupils to better label and discuss their own emotions. This improved self-perception enables better understanding of the viewpoints of others (Roots of Empathy, 2012d). This pillar is closely associated with outcomes of empathy and recognition of emotions being investigated in this North Lanarkshire study.

**Perspective Taking**
Perspective taking is encouraged and supported through group work and discussion during ROE lessons. Such work allows pupils to recognise how views held by others are different from their own and so how best to collaborate on shared goals. This pillar is also closely associated with the outcome of empathy which is nurtured through the collaborative tasks undertaken during the programme.

**Temperament**
Interaction with the baby and parent allows pupils to gain an understanding of individual differences making every person unique. Pupils learn how to interpret the baby's responses by asking questions of the parent and by observing the baby during the programme term and throughout developmental milestones. Respectfulness and acceptance of individual differences are encouraged when this developmental learning takes place.

**Attachment/Attunement**

Throughout the programme pupils observe the strengthening and developing relationship between the baby and parent. Pupils learn the importance of caring, loving relationships; how secure attachment is fostered and influences future relationships. The programme aims to build a pupil's understanding of responsive parenting and how relationships are formed and supported.

**Infant Development**
Pupils participating in ROE follow the development of the baby throughout the school year, learning methods of physical and emotional care that the baby requires. Developmental milestones are observed, contributing to the pupils' understanding of child development. Through observing and discussing the baby's behaviours and interactions, it is anticipated that the children will learn to identify and interpret, not only their own, but their classmates' emotions. This links to the outcomes of this study of knowledge of infant development and recognition of emotions.

**Other pillars**
A number of other pillars are described by Roots of Empathy. While not being directly measured in this study, the ROE Programme includes content associated with these pillars. For example, the pillars of Inclusion and Participatory Democracy underpin all of the programme's activities and experiences. How to discuss, share opinions, collaborate respectfully and build consensus are modelled throughout the programme. The pillars of Neuroscience and Infant Safety contribute to a pupil's understanding of how to care for a baby, are also included in the programme. Finally the pillars of Male Nurturance, Violence Prevention and Prevention of Teen Pregnancy contribute to violence awareness and responsible parenting (Roots of Empathy, 2012d).

## 1.2.2 Roots of Empathy Programme Outcomes

The current study identified empathy, prosocial behaviour, anger management/aggression, wellbeing, classroom environment, knowledge of infant development and recognition of emotions as the key outcomes of the ROE Programme which would be investigated. These relate to the programme pillars and to the 4 capacities of the Scottish Government's Curriculum for Excellence (2004) (CfE) which aims to support all children and young people to become successful learners, confident individuals, effective contributors and responsible citizens. Previous research studies also investigated the effects of the ROE Programme on primary classes, focusing on the programme outcomes. General findings in relation to the outcomes will be discussed below with specific ROE research findings discussed in the following section.

**Empathy**
The development of empathy is considered essential to the healthy emotional and social functioning of children and adolescents due to its role in altruistic and prosocial behaviour (Eisenberg, Miller, Shell, McNalley and Shea, 1991). The parent–child relationship appears to play a central role in both the development of empathy and its relationship to the expression of prosocial and antisocial behaviours (Carlson and Sroufe, 1995). Children with impaired attachments are at risk of compromised empathy development (Bowlby, 1988).

Kate Cairns (2002) draws from concepts in attachment theory to emphasise the importance of empathy. She argues that insecurely attached babies do not learn to regulate emotions struggling to distinguish feelings and emotional experiences. Later on the child will have difficulty expressing feelings and will find empathy difficult. She highlights the difficulties for children who are insensitive to the feelings of others, unaware of their own feelings and incapable of reading non-verbal signals. From Cairns' perspective empathy is of critical importance in social interaction.

Empathy is a complex construct that continues to be a focus of ongoing study. There are multiple definitions of empathy, perhaps indicating the intricate connections with other emotions and behaviours. Most theories describing empathy commonly include reference to affective response i.e. feeling with another (emotional empathy) and/or the distinction between oneself and another (cognitive empathy). However, there is much discord regarding the latter point with some theorists believing that some differentiation between self and other is required for empathy to develop (Feshbach, 1975), while others assume that differentiation is not required for early stages of empathy (Hoffman, 1982). An attempt to

combine these areas was made by Feshbach (1979) who proposed a multi-component model of empathy including both emotional and cognitive elements (Schonert-Reichl et al., 2012).

Roots of Empathy defines empathy as "*the ability to identify with another person's feelings. The ability to see and feel things as others see and feel them is central to competent parenting and successful social relationships in all stages of life.*" (Roots of Empathy, 2012c). Roots of Empathy also defines the cognitive and affective aspects of empathy, "*The cognitive aspect is perspective taking and the affective aspect is emotion.*" (Roots of Empathy, 2012a).

Perhaps the most expansive of proposed theories encompassing the development of empathy in children is that by Hoffman (1982, 2000). Hoffman proposes a developmentally shifting pattern of empathy across childhood, moving from non-specific awareness ('global empathy') to prosocially motivated and other-person oriented ('empathic concern'). Hoffman's four stage model defines 'global empathy' (0-12 months) to precede 'egocentric empathy' (toddler) which itself is followed by 'empathy for another's feeling' (3-8 years) and finally 'empathy for another's condition' (late childhood and early adolescence) (Hoffman, 2000). The theory is generally supported empirically (Schonert-Reichl et al., 2012) with a child developing the ability to recognise and understand emotions both in himself and in others.

The ability to identify, understand and contextualise emotional reactions and feelings is relevant to social emotional literacy programmes (Woolfolk, Hughes & Walkup, 2008). Hoffman (1982) proposed that development in young children's perspective taking is crucial to their abilities to differentiate between their own and others' distress and to correctly understand others' emotional reactions. These skills are believed to foster empathy sympathy and, consequently, more and higher quality prosocial behaviour.

Although empathy and sympathy are two separate constructs, it has been claimed they are closely related (Eisenberg and McNally, 1993; Hoffman, 2001 as cited in Albiero, Matricardi, Speltri and Toso, 2009). A lack of empathy could indicate an inability to see the world from another's point of view or to feel compassion toward their problems (Davis, 1994; as cited in Albiero, Matricardi, Speltri and Toso, 2009). This could argue a relationship between empathy and sympathy. As empathy is the ability to feel with another, and to distinguish between oneself and another, it is essential sympathising takes place in this process. Sympathy, however, is the compassion for another's feelings which can take place without empathising, as this does not involve feeling the emotion that the other person feels.

Previous research also supports a mutually affective relationship between empathy and aggression (Feshbach, 1989; Main & George, 1985; Patterson, 1982; Patterson, DeBaryshe & Ramsey, 1989 as cited in Strayer, Fraser and Roberts, 2004). Strayer, Fraser and Roberts (2004) found negative associations between empathy and observed expressions of anger in peer play groups of young children. They suggest that the relationship between empathy and anger is "bidirectional": whilst feelings of anger can prohibit empathic responses (Eisenberg, Fabes, Carlo and Karbon, 1992), feelings of empathy can prohibit feelings of anger. It is also thought that empathic children can prevent feelings of anger and potential conflict through effective problem solving skills, which contrasts with aggressive children who are more likely to encounter conflict through distortions of social perceptions (Strayer et al., 2004).

Differences in social understanding between groups may highlight a difference in empathic understanding. Interestingly not only have gender differences been observed but empathic awareness between friends has also been found to be higher and more accurate when compared to others with whom a person is not so closely associated (Myers, 2005).

Social understanding has been linked with positive academic experiences (Schultz, Selman & LaRusso, 2003 as read in Schonert-Reichl et al. 2012). Empathy allows social understanding to be employed when making and sustaining positive social relationships which, in turn, support academic achievement. In this manner, empathy may act as 'social glue' and is described by Schonert-Reichl to be 'critical' for successful social participation (Schonert-Reichl et al. 2012).

It has been suggested that empathy is central to forming and maintaining positive relationships. Empathy has been linked to many other aspects of human development including: social understanding, prosocial

behaviour, reduction in aggression and the development of recognition of emotions. Therefore, it is important to evaluate the influence of the ROE Programme on empathy.

**Prosocial Behaviour**
Prosocial behaviour refers to helping another person without being motivated by a reward, and encompasses various terms including altruism (Warneken and Tomasello, 2009). The ROE Programme emphasises the importance of developing these behaviours and it is of interest to evaluate these behaviours in children who take part in the programme.

It has been demonstrated that young children (aged 18 months) naturally display prosocial behaviours in various situations (Warneken and Tomasello, 2009). This suggests prosocial behaviour is a naturally occurring trait (whether biologically or culturally derived), which is not motivated by reward.

Warneken and Tomasello (2009) suggested that altruism is a naturally occurring trait, which is constructed further through socialisation. As children get older they become more influenced by social norms and this plays more of a part in their prosocial behaviour. Younger children are less aware of public perception and do not try to act in a way according to how they want others to see them before 8 years of age (Banerjee, 2002). Furthermore "*research on dispositional praise in the domain of prosocial behaviour, (in which adults provide internal attributions highlighting the child's prosocial personality to be for example 'a nice and helpful person'), does not influence prosocial behaviour before 8 years of age (e.g. Grusec & Redler, 1980). This finding indicates that changes in children's self-image mediate prosocial behaviour only after they have gained an understanding of personality traits as stable entities (Eisenberg et al., 2006)*" (Warnaken and Tomasello, 2009, p.467).

Caprara, Barbaranelli, Pastorelli, Bandura and Zimbardo (2000) found early prosocial behaviours to strongly predict future levels of academic achievement in their U.S. study of 294 3rd grade children. The children's 3rd grade prosocial behaviour scores from the study were used to predict their 8th grade peer preferences and academic achievement. This was found to highly correlate indicating a higher level of prosocial behaviour can improve the level of academic achievement in later years. This does not mean that high prosocial behaviour equates to a higher level of general intelligence but may provide children with the skills to further achieve in education. Vitaro, Brengen, Larose & Tremblay (2005) supported this in their study, finding the lower the prosocial behaviour the higher the number of children that left school without a high school diploma.

**Anger management/Aggression**
Reducing levels of aggression in young children is a key target of the ROE Programme. Tremblay, Nagin, Seguin, Zoccolillo, Zelazo, Boivin, Perusse & Japel (2004) reported spontaneous physical aggression as a highly unusual and unlikely occurrence in school children, suggesting that children who display these kinds of behaviours have shown a tendency to react in an aggressive manner at a previous age. As the regulation of aggression takes place at pre-school age, children who have not already learned how to control their anger are at the highest risk of displaying serious violent aggressive behaviours in later life.

Previous research has found various risk factors for high levels of aggression including; low IQ, impulsivity, hyperactivity, lack of empathy and fearlessness (Lipsey & Derzon, 1998; Tremblay & LeMarquand, 2001). Tremblay et al. (2004) also stated that having younger siblings was one of the best predictors of high physical aggression.

Tremblay (2000) and Cote, Vaillancourt, Farhat, LeBlanc, Nagin, & Tremblay (2006) noted that although physical aggression decreases from the time children begin school until the end of high school, the middle childhood years are characterised as a time in the life span in which significant linear increases in relational and other forms of indirect aggression occur.

Tremblay et al. (2004) commented that most intervention programmes to prevent youth physical aggression have targeted school age children. However, as children normally learn to inhibit physical aggression during the preschool years, this may be the most appropriate period for preventative interventions. Interventions at the preschool stage may have more of an impact than interventions 5 to 10 years later, when physical aggression has become a way of life.

As ROE has been shown to reduce aggression in primary school children (Schonert-Reichl and Scott, 2009), this may help children who have 'fallen through the net' at the preschool stage and who still need help in managing aggressive behaviours.

**Wellbeing**

The wellbeing of children and young people and helping them reach their full potential has recently become an important focus, increasingly reflected in changing policies and practice. CfE (2004) aims to develop its four capacities of successful learners, confident individuals, effective contributors and responsible citizens through eight main curriculum areas, one of which is Health and Wellbeing. One of the key aspects of CfE is the "physical, mental and emotional wellbeing" of young people in Scotland.

Embedded within CfE (2004) is the Getting it Right for Every Child agenda (GIRFEC), an approach developed by the Scottish Government for use by children's services and agencies to provide a focus on making positive impacts for all. At the centre of GIRFEC is the wellbeing of children and young people as described under eight indicators: Safe, Healthy, Achieving, Nurtured, Active, Respected, Responsible and Included. GIRFEC regards the eight indicators as basic entitlements which allow children to grow and develop to their full potential. The Scottish Government has provided these indicators as a basis for interventions and assessments and as a code of practice that all professionals involved with children and young people should be working within (Scottish Government (2012) A guide to Getting it Right for Every Child).

At a time when wellbeing is recognised as a key aspect in development for all outcomes it is important to recognise programmes and interventions which support the development of wellbeing. ROE is a social and emotional learning programme which aims to promote children's social and emotional competence and wellbeing; it is therefore of interest to investigate whether wellbeing is impacted as a result of the ROE Programme. Whilst empathy is a key feature of ROE it could be thought that increased empathy runs alongside general wellbeing. Secure attachment and parental empathy is highly important to a child's wellbeing and it is this secure attachment which helps to build empathy within the child (Goleman, 2006). However, to date, little research has been conducted in examining the link between increased empathy and wellbeing. Given the nature of ROE and the suggested outcomes it might be expected that wellbeing would increase in those children receiving the programme.

**Class Climate**

'Classroom climate' (classroom environment) as first described in 1974 by Moos, defines factors of a learning environment which contribute to a learner acquiring new knowledge and skills inherently important for their academic education and social growth (Fraser, 1998). Moos proposed that these features of classroom climate are not specific to particular learning processes, but rather permeate the learning environment and include the attitude of the learners themselves.

This area of educational research has benefited from significant investigation; such is its importance in achieving positive learning outcomes and experiences for learners (Fraser, 1982; 1991). There has been no full consensus to date on what constitutes a positive classroom environment. However, it is generally held that a positive classroom climate would include pupils being personally supported and respected by teachers, positive relationships being sustained between class peers and work which is stimulating and orderly with pupils being well focused on tasks (Yoneyama & Rigby, 2006). Assessment of classroom environment has been described as a rich source of real-world, contextual information on learning situations (Tobin & Fraser, 1998).

Previous investigations have found test scores from classroom environment measures to be 'consistently and strongly' associated with academic learning outcomes (Fraser and Fisher, 1982). Higher perceived levels of cohesiveness, satisfaction and goal direction with lower levels of disorganisation and friction were linked with higher achievement in a variety of outcomes. Features of the classroom and school environment have been shown to be strong predictors of achievement and attitude of learners. Academic achievement has been linked with classroom climate measures, with poorer results in classroom environment measurement associated with poorer peer relations and academic focus, as well as higher levels of pupil aggression (Barth, Dunlap, Dane, Lochman & Wells, 2004).

Bullying and classroom climate has been investigated with associations between both areas being found. Cerezo and Ato (2010) reported pupils who were involved in bullying situations (bullying and victim situations) exhibited more negative classroom climate perception results than those pupils who were not in bullying situations (or were classed as 'neutral' in their bullying situation). In a separate study it was reported that pupils who had repeatedly bullied may also show negative classroom climate measure results (Yoneyama & Rigby, 2006). The structure of social relationships and classroom climate were reported as two main elements of social interaction in both the initiation and persistence of bullying/victim problems (Cerezo & Ato, 2010).

Classroom climate has been shown to affect how a learner behaves socially (Kellam, Ling, Merisca, Brown & Ialongo, 1998). As this influences learning, recording classroom climate is pertinent when investigating a programme which may affect social interactions and peer relationships within a classroom. This rationale supports the use of class climate measures when investigating the impact of the Roots of Empathy Programme on social interaction and associated learning environment change.

**Knowledge of Infant Development**
Knowledge of infant development has a significant role in responsive parenting with research showing that this should be a core part of parenting interventions along with a number of other key aspects (Petch & Halford, 2008). In a study of high risk infants, Hess, Teti and Hussey-Gardner (2004) found that mothers, who had low knowledge of infant development but high self efficacy, were less confident in interactions with their infants than mothers with high self efficacy and high knowledge of infant development. Further research by Moawska, Winter and Sanders (2009) found that the relationship between parenting confidence and dysfunctional parenting was regulated by parenting knowledge, which included knowledge of child development.

Research to date has shown that increased knowledge of infant development positively influences the effectiveness of other fundamental aspects of parenting. Roots of Empathy states that the long term focus of the ROE Programme is to build capacity for the next generation for responsible citizenship and responsive parenting. A key aspect of the programme, with this focus in mind, is about knowledge of infant development (Roots of Empathy, 2012e), which is a focus of this study.

**Recognition of Emotions**
The recognition of emotions in self and others is a key aspect of social interaction and emotional wellbeing which ROE aims to develop. Children observe and discuss the baby's feelings and emotions during lessons, which aim to develop their own emotional understanding and expand their ability to explain their own feelings. ROE aims to foster emotional literacy thus encouraging prosocial behaviour (Roots of Empathy, 2012d).

In describing a person's emotions, young children generally tend to attribute emotions to external factors, however, when emotions are perceived to be 'negative' they tend to be attributed to internal factors (Fabes, Eisenberg, Nyman and Michealieu, 1991). The ROE Programme aims to improve children's ability to recognise and understand their own and others' emotions. An improved understanding of different emotions could help to increase children's knowledge around the factors (e.g. reasons that a baby might cry) and strategies (e.g. how to help a baby that is crying) involved with different emotions.


## 1.3 Previous ROE Research

Roots of Empathy research studies (2000-2012) have consistently demonstrated an increase in prosocial behaviours and a decrease in aggressive behaviours. Three primary goals are at the core of the ROE Programme framework and provide the research structure for the current study:
1. to foster children's social and emotional understanding and competence;
2. to promote the development of more caring and less aggressive behaviours;
3. to increase children's knowledge of infant development and effective parenting practices (Chartier, Whalen, Chateau & Boyd 2011; Roots of Empathy, N.D.; Schonert-Reichl & Scott, 2009).

Between 2000 and 2007, a number of studies were conducted in Canada by Schonert-Reichl and Hertzman, evaluating the effectiveness of ROE in promoting children's social and emotional competence. There were a number of similar features, for example, control classrooms were chosen to match the programme classrooms as closely as possible for school year level, gender and ethnicity, and often a range of measures were utilised (Schonert-Reichl & Scott, 2009).

Further results report an increase in caring behaviours in ROE children. The programme appeared to promote an increase in behaviours such as helping, sharing and co-operating (Schonert-Reichl & Scott, 2009). When children's empathy and prosocial behaviours were assessed following the ROE Programme, results often showed these children to be significantly more likely to have an increase in their peer ratings of prosocial behaviours in comparison to the control children (Schonert-Reichl & Scott, 2009). Improved caring and supportive behaviours have shown considerable improvements on peer reports of prosocial characteristics and peer acceptance on completion of the ROE Programme. This improvement has important benefits, particularly for children's long term outcomes, as research suggests prosocial behaviour could be linked to academic achievement (Caprara et al., 2000).

Previous ROE research has consistently demonstrated a number of key findings including a significant decrease in aggressive behaviours (Schonert-Reichl & Scott, 2009). Results have illustrated immediate effects of reduced aggression among programme children in contrast to control children whose aggressive behaviours increased (Schonert-Reichl & Scott, 2009). These findings suggest that not only does ROE effectively prevent the escalation of aggression levels but it also intervenes to support children in reducing their aggressive behaviours as the school year progresses

Pupils' perceptions of a caring classroom environment is another key finding of the ROE literature, as these classes often demonstrate a significant increase in their assessment of classroom supportiveness and classroom autonomy (Schonert-Reichl & Scott, 2009). By creating valuable opportunities, the programme encourages prosocial behaviours to become the classroom norm (Schonert-Reichl et al., 2012) impacting on the climate, enhancing positivity and supportiveness. Positive results on class climate measures have also been associated with less aggression and greater academic achievement, emphasising the effectiveness of the ROE Programme and the impact of social interactions on pupil behaviour in the learning environment (Barth et al., 2004).

ROE proposes that the development of a more positive, sociable climate stems from the children's increased knowledge of each other's emotions which has been shown to significantly increase following completion of the programme (Roots of Empathy, 2012d). Studies have repeatedly reported ROE children to be more advanced in social and emotional understanding on almost all dimensions assessed compared to control children (Schonert-Reichl & Scott, 2009). This ability to recognise and understand others' emotions in addition to their own is interpreted by ROE to mean children are less likely to hurt others and instead build a culture of care and safety within the classroom (Roots of Empathy, 2012a).

A major finding from previous ROE research is the maintenance of the improved outcomes after the programme has ended. Research by Santos et al. (2011) replicated all the main findings, from the previous research by Schonert-Reichl and Hertzman (2000-2007), showing the beneficial immediate effects on prosocial (teacher and student rated) and aggressive (teacher and self rated) behaviours in the ROE groups. In addition the study highlighted the lasting results of the programme. At three follow up assessments, every 12 months following the end of the programme, the teacher rated measures showed all outcomes (with the exception of prosocial behaviours in one of the ROE groups) to have maintained or further improved the effect on the children. Student rated effects were only shown immediately and not at follow up. This result is important in supporting how interventions during the school years are beneficial for an enduring effect on children by promoting positive development and reducing aggression (Greenberg, 2010; Weissberg & Greenberg, 1998; cited in Schonert-Reichl et al., 2012).

Recent ROE research studies have emphasised the importance of increased prosocial behaviours among the children after the intervention, challenging a popular belief that prosocial behaviours naturally increase as children increase in age (Nantel-Vivier, Kokko, Caprara, Pastorelli, Gerbino, Paciello, Cote, Pihl, Vitaro and Tremblay, 2009). The enhancement of positive qualities, such as prosocial behaviour and empathy, and the prevention of problems before they arise (Damon, 2004; cited in Schonert-Reichl et al., 2012) have therefore become a focus of current research.

Schonert-Reichl et al. (2012) investigated the effects of ROE on children's social and emotional competence, anticipating reduced aggression, increased emotional understanding and greater prosocial behaviours. Fourteen classrooms received the programme, with an implementation level of 96%. All control and ROE participants were tested prior to and following the intervention being implemented. The assessment required children to self-report their own understanding of infant distress, empathy and perspective taking and for teachers and classroom peers to rate the children's levels of aggressive and prosocial behaviours. The results identified significant positive changes in the ROE classrooms in contrast to the control children. The children self-reported improved understanding of infant crying; peers reported increased prosocial behaviours and teachers reported reduced aggressive behaviours at the end of the intervention. No significant differences were established between ROE and control classes on self-reported empathy and perspective taking. These findings may be attributed in part to the measures used, as they have not been previously reported. The assessment tools used were most appropriate for use by adolescents and adults and were perhaps not suitable to discern the delicate changes of the children's development (Schonert-Reichl et al., 2012). A secondary aspect to Schonert-Reichl's (2012) study was to examine the fidelity of ROE when put into a 'real world' setting delivered in regular classrooms with minimal support from the programme. They found high implementation rates so did not look at any effect of implementation on outcomes.

## 1.4 North Lanarkshire Psychological Service Evaluation

Both quantitative and qualitative methods were used: questionnaires (pupil and teacher reported), video observations and group tasks.

Results were analysed by Phase (which represents two different groups of pupils) in the following ways: Phase 1 & 2 data together, Phase 1 data separately, Phase 2 data separately and a comparison of Phase 1 & 2 data. Further analysis examined the effects of primary stage, gender, deprivation level and having younger siblings.

A further aspect of this study included measuring the fidelity of the ROE Programme when implemented in a 'real world' setting (i.e. primary schools within North Lanarkshire Council). Programme implementation was monitored through instructor diaries to give information on programme lesson dates, lesson aim completion and class engagement. Instructor, Class Teacher and Head Teacher comments were also sought with regards to the ROE Programme and its perceived impact. Finally, both ROE and control schools were asked to note any Social and Emotional Learning programmes their class had participated in throughout the school year.

The following definitions will be used in relation to the measurement of outcomes in the present study:

**Table 1: Definitions of subscales**

| Outcome | Measure | Subscale | Definition |
|---|---|---|---|
| Empathy | Thinking & Feeling Questionnaire | Cognitive Empathy | Or perspective taking, refers to the ability to think about and work out what others are thinking and feeling. Also known as 'Theory of Mind' or 'mentalising' (Premack & Woodruff, 1978). |
| | | Emotional Empathy | Described as being "the process which allows us to experience what it feels like for another person to experience a certain emotion or sensation" (Singer, 2006: p856). |
| | | Sympathy | "A vicarious emotional reaction based on the understanding of another person's emotional state or situation and involves sorrow or concern for the other" (Eisenberg, 1991: p129). |
| Prosocial Behaviour | Altruism Drawing Measure | | Helping, sharing, giving, co-operation. |
| | Strengths & Difficulties Questionnaire (SDQ) | Prosocial behaviour | 'Voluntary behaviour that benefits others or promotes harmonious relations with others' (Bergin, Talley & Hamer, 2002: p13). |

| Outcome | Measure | Subscale | Definition |
|---|---|---|---|
| | | | |
| Anger Management | Child Anger Management Scale (CAMS) | Inhibition | Turning emotion inward. |
| | | Dysregulated Expression | The expression of emotion in ways that are non constructive. |
| | | Emotion regulation | Strategies for coping with anger by controlling specific emotion behaviours. |
| | Strengths & Difficulties Questionnaire (SDQ) | Total Difficulties | The sum of the scores for scales of emotional symptoms, conduct problems, hyperactivity and peer problems.<br><br>**Emotional symptoms:** 'Mood or emotional responses dissonant with or inappropriate to the behaviour and/or stimulus' (Children Of Parents with a Mental Illness (COPMI), 2012)<br>**Conduct problems:** 'Identifiable behaviours in the individual that fail to conform to societal norms and encroach on the rights of others' (Children Of Parents with a Mental Illness (COPMI), 2012)<br>**Hyperactivity-inattention:** Level of attention deficit or hyperactivity disorder, which is characterised by persistent and impairing symptoms of inattention, hyperactivity and impulsivity (Children Of Parents with a Mental Illness (COPMI), 2012)<br>**Peer problems:** Evidence that children who experience difficulty making friends and getting along with their peers are at increased risk of a wide range of psychosocial outcomes (Children Of Parents with a Mental Illness (COPMI), 2012) |
| Wellbeing | Stirling Children's Wellbeing Scale | Positive Emotion | Subjective (hedonic) wellbeing – primarily concerned with the immediate states of pleasure and happiness. Seen to comprise of life satisfaction, the presence of positive mood and the absence of negative mood (Ryan & Deci, 2001). |
| | | Positive Outlook | Psychological (eudaimonic) wellbeing – concerned with the actualisation of human potentials. Based on the eudaimonic perspective and seen as having the components of autonomy, personal growth, self acceptance, life purpose, mastery and positive relatedness (Ryff & Keyes, 1995). |
| | | Social Desirability | Social desirability is observed when participants give answers that they think the researchers want to hear or rate all items with the same response.<br>Included to ensure that the participants were engaging in the items on the scale and to provide a helpful measure of response set/socially desirable answers. |
| Class Climate | My Class Inventory – Short Form (MCI-SF) | Satisfaction | Extent to which students like their class. |
| | | Friction | Extent of tension and quarrelling amongst students. |
| | | Competitiveness | Extent to which the students perceive an atmosphere of competition in the classroom. |
| | | Difficulty | Extent to which students have difficulty with the work of the class. |
| | | Cohesiveness | Extent students know, help and are friendly towards each other. |

# Chapter 2: Hypotheses & Research Questions

## *2.1 Quantitative*

As a result of the ROE Programme there will be:

**1. Empathy**
(Pupil Self Rated)
    1.1. A significant increase in cognitive empathy in the ROE group compared to the control group
    1.2. A significant increase in emotional empathy in the ROE group compared to the control group
    1.3. A significant increase in sympathy in the ROE group compared to the control group

**2. Prosocial behaviour:**
(Pupil Self Rated)
    2.1. A significant increase in altruistic tendencies in the ROE group compared to the control group

(Teacher Rated)
    2.2. A significant increase in prosocial behaviour in the ROE group compared to the control group

**3. Anger management:**
(Pupil Self Rated)
    3.1. A significant decrease in inhibition in the ROE group compared to the control group
    3.2. A significant decrease in dysregulated expression in the ROE group compared to the control group
    3.3. A significant increase in emotion regulation in the ROE group compared to the control group

Total difficulties
(Teacher Rated)
    3.4. A significant decrease in total difficulties in the ROE group compared to the control group

**4. Wellbeing**
(Pupil Self Rated)
    4.1. A significant increase in positive emotion in the ROE group compared to the control group
    4.2. A significant increase in positive outlook in the ROE group compared to the control group

**5. Class climate:**
(Pupil Self Rated)
    5.1. A significant positive impact on the pupils' perception of classroom climate in the ROE group.
    5.2. A significant positive impact on the relationship between the ROE pupils' pre-test preferred classroom environment score and their post-test actual classroom environment score.

(Teacher Rated)
    5.3. A significant positive impact on the teachers' perception of classroom climate in the ROE group compared to the control teachers.
    5.4. A significant positive impact on the relationship between the ROE teachers' pre-test preferred classroom environment score and their post-test actual classroom environment score compared to the control teachers.

## *2.2 Qualitative*

**1. Empathy**

In the Phase 2 ROE group will there be an increase in observed empathic behaviours?

**2. Prosocial behaviour**

In the Phase 2 ROE group will there be an increase in observed prosocial behaviours?

### 3. <u>Aggression</u>

In the Phase 2 ROE group, will there be a decrease in observed aggressive behaviours?

### 4. <u>Knowledge of infant development</u>

Will there be an increase in children's knowledge of infant development (KoID) in the ROE group in comparison to the control group?

### 5. <u>Recognition of emotion</u>

Will there be an increase in children's recognition of emotion in the ROE group in comparison to the control group?

# Chapter 3: Method

## 3.1 Design

Seventeen primary schools (19 classes) across North Lanarkshire received the Roots of Empathy Programme in 2011/12. The schools were selected by High School cluster. When the research was conducted Phase 1 schools (8 primary schools, 10 classes) were in their second year of running the programme, with different classes participating from the previous year. Phase 2 schools (9 primary schools, 9 classes) were running the programme for the first time. Seventeen control schools (18 classes) were matched with ROE Programme schools in accordance with deprivation level, free school meals and clothing grant data obtained from North Lanarkshire Council as well as primary stage.

The research utilised a quasi-experimental mixed design. The outcomes being measured for change were:
- Empathy
- Prosocial Behaviour
- Anger Management/Aggression
- Wellbeing
- Class Climate
- Knowledge of Infant Development
- Recognition of Emotions

Qualitative information was obtained through a group task, video observations, instructor diaries and a class teacher and Head Teacher questionnaire for the ROE group.

## 3.2 Participants

### 3.2.1 Pupils

All pupils involved in the research (ROE Programme and control) were in primary 3 to primary 5. In Phase 1 schools the programme was implemented in Primary 5 classes (with the exception of two Primary 4 classes and two composite P4/5 classes). There were 435 pupils in Phase 1 (ROE 264, control 171). Phase 2 schools implemented the programme in Primary 4 classes (with the exception of five composite classes which were either P3/4, P4/5 or P3/4/5). There were 350 pupils in Phase 2 (ROE 155, control 195).

Permission forms were sent out to 939 pupils in the 34 schools which participated in the research (485 ROE Programme, 454 control). Consent was given to participate in the research for 785 children (419 ROE Programme, 366 control). This gave a return rate for permission forms of 84% overall (86% ROE Programme, 81% control).

The research was conducted with all pupils for whom parental consent was obtained. Pupils were consulted on their involvement at the start of the project and only participated following verbal agreement.

Of the 785 pupils who returned permission forms (419 ROE Programme, 366 control) 762 participated in the pre-testing (412 ROE Programme, 350 control) with 23 absentees (7 ROE, 16 control). This gave an overall participation rate at pre-testing of 97% (98% ROE Programme, 96% control).

At post-testing 749 pupils participated (401 ROE, 348 control) with 36 absentees (18 ROE, 18 control). This gave a participation rate of 95% overall (96% ROE & 95% control).

The 785 pupils who had permission to participate in the ROE research (419 ROE, 366 control) were aged between 6 and 10 years old. There were 401 girls (215 ROE Programme and 186 control) and 384 boys (204 ROE Programme and 180 control).

### 3.2.2 Teachers

Thirty-seven classes participated in the research (19 ROE Programme, 18 control). Teachers were asked to complete the My Class Inventory (Short Form) at pre and post-testing. Two teachers did not fully complete this at pre-testing (preferred scale not completed). This gave a participation rate at pre-testing of 100% overall for the actual scale and 95% overall (95% ROE, 94% control) for the preferred scale.

One teacher did not complete the actual and preferred questionnaire at post-testing. This gave a participation rate at post-testing of 97% overall for the actual and preferred scale (95% ROE, 100% control).

The SDQ was also completed for all pupils (with permission) by class teachers at pre and post-testing. Overall, 14 SDQs were not completed at pre-test (6 ROE, 8 control); this gave a participation rate of 98% at pre-test. At post-test 23 SDQs were not completed (18 ROE, 5 control); this gave a participation rate of 97% at post-test.

### 3.2.3 Instructors

Fifteen instructors delivered the programme in the 19 classes (four of the instructors delivered the programme in two schools each). There were seven Phase 1 instructors who were trained in 2010/2011 and eight Phase 2 instructors who undertook the initial part of their training in October/November 2011.

All instructors completed diaries at the end of each Theme. Instructors were employees of Action for Children or the local authority.

*See appendix 1 for details of instructor training.*

## *3.3 Measures*

A number of measures were used to assess the programme outcomes: empathy, prosocial behaviour, anger management/aggression, wellbeing, class climate, knowledge of infant development and recognition of emotions. These were chosen as they were suitable for the age range of the participants within this study and for their ability to be used longitudinally. Pupils and teachers completed these measures at pre and post-test. Delivery of the questionnaires was adapted depending on age and ability of pupils.

### 3.3.1 Quantitative Measures

**The Thinking & Feeling Questionnaire (Pupil rated)**
- Measures empathy in terms of separable cognitive and affective components, as well as sympathy.
- Consists of three scales: cognitive empathy, emotional empathy and sympathy.
- 29 item questionnaire, rated on a 5 point Likert scale.
- Age range 8+.
- Internal reliability for the Cognitive Empathy subscale: .85 and for the Affective Empathy subscale: .69.
- Developed by Zoll, Enz, Schaub, Woods, Hall & Aylett (2005).

**The Altruism Drawing Measure (Pupil rated)**
- Measures altruistic tendencies in children including helping, sharing, giving and co-operation.
- A pupil choice measure consisting of 15 pictures each showing three children involved in various activities (performer of altruistic act, receiver or bystander).
- Age range 8-12 year olds and can be modified for use with younger children.
- Developed by Seagle, Jessee & Nagy (2002).

**Child Anger Management Scale (CAMS) (Pupil rated)**

- Measures anger management and children's ability to understand and cope with anger experiences.
- Consists of three scales: inhibition, dysregulated expression and emotion regulation.
- 11 item questionnaire, rated on a 3 point Likert scale.
- Age range 6-14 years.
- Internal reliability ranges from .62 to .77 and test-retest reliability ranges from .61 to .80 (Zeman, Shipman & Penza-Clyve, 2001).
- Developed by Zeman et al. (2001).

### The Stirling Wellbeing Scale (Pupil rated)
- Measures emotional and psychological wellbeing and can assess the effectiveness of projects and interventions.
- Consists of three scales: positive emotion, positive outlook and social desirability (determines whether any participants' scores have a response set – that is, there is a bias in the way they answer – or a predominance of socially desirable answers).
- 12 item questionnaire, rated on a 5 point Likert scale.
- Age range 8-15 years.
- Internal reliability of .82.
- Developed by Liddle & Carter (2010).

### My Class Inventory (Short Form) (MCI-SF) (Pupil & Teacher rated)
- Measures pupils' and teachers' perceptions of both their 'actual' and 'preferred' classroom environment in order to identify discrepancies and can be used to plan interventions aimed at altering such perceptions.
- Consists of five scales: satisfaction, friction, competitiveness, difficulty & cohesiveness.
- Pupil questionnaire: 2 x 25 item questionnaires rated with a yes or no response.
- Teacher questionnaire: 2 x 25 item questionnaires rated on a 5 point Likert scale.
- Age range: primary-aged pupils.
- Pupil questionnaire: internal reliability ranges from .58 to .82 for the various scales (Fraser & Fisher, 1986).
- Teacher questionnaire: internal reliability ranged from .57 to .88 for the various scales (Sink & Spencer, 2007).
- Pupil questionnaire developed by Fraser & Fisher (1986).
- Teacher questionnaire developed by Sink & Spencer (2005).

### Strengths & Difficulties Questionnaire (SDQ) (Teacher rated)
- Measures children and young people's behaviours, emotions and relationships.
- Consists of 5 scales: emotional symptoms, conduct problems, hyperactivity, peer problems and prosocial behaviour.
- Calculates total difficulties score from emotional symptoms, conduct problems, hyperactivity and peer problems scores.
- 25 item questionnaire, rated on a 3 point Likert scale.
- Age range 4-16 years.
- Internal reliability for the teacher rated questionnaire ranges from .63 to .83 for the scales and test-retest reliability ranges from .72 to .85 (Stone, Otten, Engels, Vermulst & Janssens, 2010).
- Developed by Goodman (1997).

## 3.3.2 Qualitative Measures

### Knowledge of Infant Development (KoID) (Pupil rated)
- Measures participants' knowledge of infant development.
- Consists of 3 questions:
  - "What are some ways babies can get hurt?"
  - "What are some ways that babies can learn?"
  - "What are some ways to keep babies safe?"

**Infant Facial Expression of Emotion (I-FEEL) (Pupil rated)**

- Measures understanding of the causes of infant cries and knowledge of behavioural strategies for helping a crying infant.
- Consists of 2 questions asked in relation to a black and white, gender neutral photograph of a baby:
    - "What are some reasons that this baby cries?"
    - "What things can you do to help a baby who is crying?"
- Age range: Grade 1-7 (P2-1st year)
- Developed by Emde, Osofsky & Butterfield (1993).

**ROE Instructor diaries**

- Designed to evaluate the programme fidelity and children's engagement for the purposes of this study.
- ROE instructors completed diaries which recorded how complete all aims were on a 3 point Likert scale within each of the nine Themes.
- They were also asked for dates of lessons to establish how many ROE lessons were doubled up.
- Class engagement and general comments were completed at instructor discretion.

**Video Observations**

- Video observations were conducted to measure empathic, prosocial and aggressive behaviours at pre-test, at the post-family visit for Themes 2, 4 & 6 and at post-test.
- A behavioural checklist was created which was adapted from the Video Interactive Guidance (VIG) principles of attuned interactions and guidance (Hilary, Landor and Todd, 2011 p.28).
- Observed empathic behaviours consisted of: listening, mirrored body language, head nodding and asking interested questions.
- Observed prosocial behaviours consisted of: helping, sharing, comforting, cooperating, turn taking and joining in.
- Observed aggressive behaviours consisted of: punishing language, defensive, competitive, retaliatory and physical aggression.
- Groups of four children were filmed at three primary schools in Phase 2.
- Schools were selected using deprivation data.
- The pupils were identified by the class teacher, were all less than 9 years of age and parental consent was given for each child filmed.

**Class Teacher and Head Teacher Comments**

Views were collected on the implementation of the ROE Programme and research project as follows:

- ROE Teacher meetings (September 2011 and May 2012).
- Focus group during teachers meeting (May 2012).
- Online survey consisting of 8 open and closed questions informed by focus group.
- Head Teacher email comments.

**Social and Emotional Learning Programmes**

Class teachers were asked to complete details of any Social & Emotional Learning Programmes, which their class had participated in throughout the year. The following details were requested:

- Type of programme
- Frequency

## 3.4 Procedure

ROE Programme schools were selected by High School cluster of associated primary schools. Control schools were matched using North Lanarkshire Council data on the percentage of pupils receiving free school meals and clothing grants. An average of the two figures was taken and matched schools were then checked against North Lanarkshire Council's deprivation data which is compiled from the Scottish Index of Multiple Deprivation (SIMD) to ensure each matched pair were of the same deprivation level. Priority was given to the deprivation data level with secondary matching performed on the calculated free school meals/clothing grants average. Deprivation levels range from 1-9 with 1 being the highest

deprivation level and 9 being the lowest. Phase 1 schools ranged from 2-9 and for Phase 2 schools ranged from 1-6.

The questionnaires were selected in relation to the programme outcomes and for ease of use. Seven researchers were involved in this study with at least two researchers administering the measures in each class following agreed procedures.

### 3.4.1 Pilot Testing

Each questionnaire was piloted in two classes prior to pre-testing (September 2011). This helped ensure measures were suitable and allowed for delivery methods to be trialled and completion time to be estimated. During the pilot testing it was evident that the group task was a more efficient and productive way of gathering the information on the I-FEEL and KoID than individual administration. This also allowed the end of the testing to be more interactive and engaging for the pupils. The order of presentation of questionnaires was altered so that the longest questionnaires were completed first to reduce fatigue effects. Changes were made to the wording of the rating scales for two of the questionnaires:

- The Thinking & Feeling Questionnaire – we removed the term 'somewhat' as this confused some children. The scales that we used were: strongly disagree, disagree, don't agree or disagree, agree, strongly agree.
- Child Anger Management Scale (CAMS) – we removed 'true' from each rating scale. The scales used were: hardly ever, sometimes, and often.

The Teacher Version of My Class Inventory (Short Form) questionnaire was used rather than the version the pupils completed, following comments from teachers during the pilot testing.

### 3.4.2 Quantitative Procedure

Following completion of pilot testing, schools were scheduled for pre-testing during a morning or afternoon session. Pre-testing was completed during October and November 2011 with pupils for whom consent had been given and who were present on the day of testing. All questionnaires were fully explained prior to completion and delivery was tailored to the age and ability of the class. The method of delivery chosen was based on teacher consultation on class ability. In some classes pupils were asked to read independently; in others the questionnaires were read aloud to the class as a whole to ensure understanding before each pupil completed the questionnaire individually. In some classes mixed delivery methods were required to take account of differing abilities.

Post-testing was completed with both ROE Programme and control schools during May and June 2012 using the same measures as at pre-testing and delivered in the same format. Testing was conducted at the same time of day as pre-testing to control for time of day effects. As a result of the delay in Phase 2 instructor training insufficient time was available to complete post-testing before the end of the ROE Programme. Following consultation with Dr Lisa Bayrami, Research Consultant ROE Canada, post-testing took place after Theme 8. It was considered that as Theme 9 consolidates previous learning there should be minimal impact on research findings.

All questionnaires were scored by the researchers, with each researcher scoring the same questionnaire at pre and post-test. Once scored all of the data was input to SPSS which was used to conduct the analysis. For pupils for whom there was missing data at either pre or post-testing (but had a teachers SDQ score) the mean score for the missing scale(s) was input. Statistical analysis was conducted for each separate measure.

### 3.4.3 Qualitative Procedure

**Group task**
Following completion of the questionnaires, the 5 questions (below) were written on flipchart paper and read aloud to the whole class. Pupils were invited to answer each question by raising their hand. One researcher asked the questions whilst the other wrote responses under each appropriate heading on the flipchart paper.

*KoID:*
1) *What are some ways that babies can get hurt?*
2) *What are some ways that babies can learn?*
3) *What are some ways to keep babies safe?*

*I-FEEL:*
4) *What are some reasons that this baby cries?*
5) *What things can you do to help a baby who is crying?*

Raw responses were recorded and analysed using qualitative thematic analysis. Thematic analysis was carried out on Phase 1&2 combined and Phase 1 and Phase 2 separately. Five researchers in total carried out thematic analysis on one question each.

Thematic analysis was conducted using a 'first', 'second' and 'third' order coding system. Each researcher firstly read through all raw responses to their question several times in order to become fully familiarised with material. First order coding was then conducted by way of assigning codes to each individual response. Second order coding involved grouping responses by way of identifying commonalities between first order coding leading to the emergence of 'sub-themes'. Third order coding lastly identified overarching main themes from the smaller groups of sub-themes (Appendices 2-11). Analyses were then compared between ROE and control groups (pre- and post-test) and notable changes were identified by each researcher. In order to control for subjectivity bias, coding was verified by a second researcher. Any discrepancies were identified and resolved through discussion.

**Video Observations**
Video observations were completed in three of the Phase 2 schools. The schools were chosen in accordance with their deprivation level to ensure the range of deprivation in Phase 2 ROE schools was represented (Phase 2 deprivation levels 1-6). The following schools were chosen for videoing: School A – Level 1 (high deprivation); School B – Level 4 (medium/high deprivation) and School C – Level 6 (medium/low deprivation).

Five recordings were made in each school: pre-testing, during the post- session of Themes 2, 4 & 6 and post-testing. Video observations were filmed by a researcher for a period of 45 minutes at each visit. Ten minute periods were identified within each 45 minute film where the children were at a table together and engaged in a group activity.

Two researchers coded the video clips. Videos were coded by dividing the ten minute segment into 10 one minute segments and the coder simply indicated the presence of the behaviour in each minute. This method allowed the comparison of how many times a behaviour occurred over a 10 minute continuous period and enabled the observation of individual behaviours in context and discussion of the impact of the Roots of Empathy Programme on aggression, prosocial behaviour and empathy.

The videos were coded by two researchers and coding was conducted using a coding sheet, based on the VIG principles of attuned interactions and guidance (Hilary, Landor and Todd, 2011 p.28), that were designed for the purpose of this study (see Appendix 12). To ensure inter-rater reliability, coding for each child was then compared. Where discrepancies appeared in coding the minute was watched again by both researchers together. If an agreement could not be met this was recorded as a discrepancy, 0.8% of the coding was recorded as discrepancies.

**Instructor Diaries**
Instructors were asked to complete a diary at the end of each Theme which asked them to record: dates of lessons, rate each aim within the Theme on how complete it was (1= not complete, 2= partially complete, 3= fully complete); rate each pupil on their engagement if possible and to leave any relevant comments. The format of the diaries was decided upon in collaboration with the instructors at a face-to-face meeting. These were sent by email for ease of completion and return.

Diaries were analysed in two ways. Completion of aims was calculated using the data from rating given and lesson dates were used to calculate how many lessons were doubled up in each school. Further to this comments were analysed by pulling together the themes from the instructors.

**Teacher and Head Teacher Comments**
Following meetings in October 2011 and May 2012 with ROE class teachers, the researchers decided to gather the views of the teachers on the ROE Programme and research project through an online survey.

Additionally, an email was sent to Head Teachers asking "Have you noticed any changes (positive or negative) as a result of ROE taking place in your school?"

A summary analysis was conducted on the comments made by the ROE teachers and Head Teachers who responded.

**Social and Emotional Learning Programmes**
At post-testing ROE and control class teachers were asked to complete details of any Social & Emotional Learning Programmes (including type of programme and frequency) which their class had participated in throughout the year.

This information was completed at post-testing rather than prior to implementation to avoid any teacher anxiety about the range of programmes offered to classes which may have influenced teacher attitude and behaviour.

A comparison was made between ROE and control classes by looking at the total number of programmes and the total number of classes participating in specific programmes e.g. PAThS.

# Chapter 4: Results

## How was the Data Analysed?

Data was collected before the ROE programme started (pre-test data), and at the end of the programme (post-test data). Analysis of data was conducted by calculating the difference scores which is the difference between pre-test and post-test scores on all questionnaires. T-tests were then used to calculate whether difference between the difference scores of ROE and control pupils were statistically significant.

Analysis was conducted on all data together and also spilt into Phase 1 and 2. Phase 1 schools were in their second year of running the programme and Phase 2 schools were new to the programme. Further analysis was conducted to look at the effects of Phase (Phase 1 v Phase 2), Primary Stage (P4 v P5), Deprivation Level (high deprivation level v low deprivation level), Gender (girl v boy) and Having Younger Siblings (younger children living in household v lone child).

The focus group data was analysed by identifying themes within the responses and then comparing quality of responses between ROE and control pupils. Key words/phrases identifying learning from the ROE programme were also noted. Video observations were coded for occurrences of empathic, prosocial and aggressive behaviours.

Results below are reported under the programme outcomes of Empathy, Prosocial Behaviour, Anger Management/Aggression, Wellbeing, Class Climate, Knowledge of Infant Development and Recognition of Emotions.

Programme fidelity (adherence to the ROE programme) was measured and on average 93% of lesson aims were fully complete. Most instructors doubled up at least two lessons throughout the programme with only two classes not having any combined lessons (both in Phase1).

For full statistical results section see Appendix 13.

## *4.1 Empathy*

### Thinking and Feeling Questionnaire

Pupils completed the Thinking and Feeling Questionnaire which measures Cognitive Empathy (the distinction between oneself and another), Emotional Empathy (feeling with another) and Sympathy. It was hypothesised that scores on each of these subscales would increase more in the ROE group than in the control group from pre-test to post-test.

### 4.1.1 Phase 1&2

**Table 2.1: Difference Scores for ROE Programme and Control Groups, for Empathy Subscales**

| **Measure** | **ROE** *Difference Score (Post-test average – pre-test average)* | **Control** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups difference scores* |
|---|---|---|---|
| Cognitive Empathy | 1.31* | -.85 | Yes |
| Emotional Empathy | .05 | -1.30* | Yes |
| Sympathy | .23 | -.11 | No |

\* Significant increase/decrease from pre-test to post-test.

When Phase 1 & 2 data was analysed together a positive impact was found for the ROE pupils whose Cognitive Empathy (distinction between oneself and another), Emotional Empathy (feeling with another) and Sympathy scores increased as measured by pupil self reports, compared to the control pupils whose scores decreased on these subscales.

However a statistically significant difference was only found between the difference scores (post-test score – pre-test score) for ROE and control pupils for Cognitive Empathy and Emotional Empathy with ROE pupils' score increasing and control pupils' score decreasing from pre-test to post-test.

ROE pupils' Cognitive Empathy score significantly increased from pre-test to post-test, and although their Emotional Empathy score increased from pre-test to post-test this increase was not significant.

Control pupils' Emotional Empathy score significantly decreased from pre-test to post-test, and although their Cognitive Empathy score decreased from pre-test to post-test this decrease was not significant.

## 4.1.2 Phase 1

**Table 2.2: Difference Scores for ROE Programme and Control Groups, for Empathy Subscales**

| Measure | ROE Difference Score (Post-test average – pre-test average) | Control Difference Score (Post-test average – pre-test average) | Significant difference between ROE and control groups Difference Scores |
|---|---|---|---|
| Cognitive Empathy | .27 | 0 | No |
| Emotional Empathy | -.78 | -.89 | No |
| Sympathy | -.21 | -.07 | No |

\* Significant increase/decrease from pre-test to post-test.

When Phase 1 data was analysed separately, ROE pupils' Cognitive Empathy score increased compared to control pupils whose score remained the same. For Emotional Empathy and Sympathy both ROE and control pupils' scores decreased from pre-test to post-test.

No statistically significant differences were found between ROE and control pupils' scores when Phase 1 data was analysed separately.

## 4.1.3 Phase 2

**Table 2.3: Difference Scores for ROE Programme and Control Groups, for Empathy Subscales**

| Measure | ROE Difference Score (Post-test average – pre-test average) | Control Difference Score (Post-test average – pre-test average) | Significant difference between ROE and control groups Difference Scores |
|---|---|---|---|
| Cognitive Empathy | 3.09* | -1.59* | Yes |
| Emotional Empathy | 1.47* | -1.66* | Yes |
| Sympathy | .99* | -.15 | Yes |

\* Significant increase/decrease from pre-test to post-test

When Phase 2 data was analysed separately, ROE pupils' scores increased on all three subscales: Cognitive Empathy, Emotional Empathy and Sympathy compared to control pupils' scores which decreased on these.

The differences found between ROE and control pupils' scores, when only Phase 2 data was analysed, were found to be statistically significant for Cognitive Empathy, Emotional Empathy and Sympathy.

Phase 2 ROE pupils' Cognitive Empathy, Emotional Empathy and Sympathy scores significantly increased from pre-test to post-test.

Phase 2 control pupils' Cognitive Empathy and Emotional Empathy scores significantly decreased from pre-test to post-test. The control group did not significantly decrease in Sympathy.

Video Observations
Video observations with four ROE pupils in three Phase 2 schools were conducted. The three schools were of varying deprivation levels: School A – high deprivation (Level 1), School B – medium/high deprivation (level 4) and School C – medium/low deprivation (level 6).

**Table 2.4: Counts of Empathic Behaviours at each ROE stage**

| | Counts of Empathic Behaviours at each ROE stage | | | | | | | | | | | | | | |
| | School A | | | | | School B | | | | | School C | | | | |
| | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 13 | Abs | 20 | 20 | 20 | 20 | 18 | 21 | 20 | 20 | 20 | 20 | 21 | 22 | 21 |
| | 10 | 18 | 20 | 21 | 20 | 18 | 18 | 20 | 20 | 20 | 20 | 22 | 20 | 22 | 21 |
| | 18 | 21 | Abs | 21 | 20 | 21 | 10 | 20 | 20 | 20 | 20 | 20 | 25 | 22 | 21 |
| | 15 | 20 | 20 | 20 | 20 | 20 | Abs | 21 | 21 | 21 | 20 | 23 | 20 | 25 | 22 |
| Total | 56 | *** | *** | 82 | 80 | 79 | *** | 82 | 81 | 81 | 80 | 85 | 86 | 91 | 85 |

Abs = absent at filming
*** Denotes that as pupils were absent cannot make fair comparison

- In School A overall there was an increase in observed empathic behaviours from pre-test (56 counts) to post-test (80 counts).
  - all pupils showed an increase
- In School B overall there was an increase in observed empathic behaviours from pre-test (79 counts) to post-test (81 counts).
  - two pupils increased
  - one pupil remained the same
  - one pupil decreased
- In School C overall there was an increase in observed empathic behaviours from pre-test (80 counts) to post-test (85 counts).
  - all four pupils showed an increase

## 4.1.4 Further Analysis

Only statistically significant results are reported within the Further Analysis sections of this report.

**Phase 1 v Phase 2**

ROE pupils

**Table 2.5: Difference Scores for ROE Programme, for Empathy Subscales**

| Measure | Phase 1 *Difference Score (Post-test average – pre-test average)* | Phase 2 *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| T&F Cognitive Empathy | .27 | 3.09 | Yes |
| T&F Emotional Empathy | -.78 | 1.47 | Yes |
| T&F Sympathy | -.21 | .99 | Yes |

A significant difference between Phase 1 and Phase 2 pupils' scores was found for:
- Cognitive Empathy - Both Phase 1 and Phase 2 ROE pupils' Cognitive Empathy scores increased from pre-test to post-test however, Phase 2 pupils' score increased significantly more than Phase 1 pupils' score.
- Emotional Empathy - Phase 1 pupils' Emotional Empathy score decreased compared to Phase 2 pupils' score which increased. This difference was significant. Phase 1 pupils' score did not significantly decrease from pre-test to post-test compared to Phase 2 pupils' score which significantly increased.
- Sympathy - Phase 1 pupils' Sympathy score decreased compared to Phase 2 pupils' score which increased. This difference was significant. Phase 1 pupils' score did not significantly decrease from pre-test to post-test compared to Phase 2 pupils' score which significantly increased.

Control pupils
No significant differences were found between Phase 1 and Phase 2 control pupils' scores for any of the empathy subscales.

**P4 v P5**

P4 pupils

**Table 2.6: Difference Scores for P4 pupils, for Empathy Subscales**

| Measure | ROE *Difference Score (Post-test average – pre-test average)* | Control *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Cognitive Empathy | 2.08 | -1.20 | Yes |
| Emotional Empathy | .15 | -1.71 | Yes |

A significant difference between ROE and control pupils' Cognitive Empathy and Emotional Empathy scores was found, with P4 ROE pupils' score increasing and P4 control pupils' score decreasing on these subscales.

P5 pupils

No significant differences between P5 ROE and control pupils' scores were found for any of the empathy subscales.

ROE pupils
No significant differences between P4 ROE and control pupils' scores were found for any of the empathy subscales.

Control pupils
No significant differences between P4 control pupils' scores and P5 control pupils' scores were found for any of the empathy subscales.

**Deprivation Level**

ROE pupils

**Table 2.7: Difference Scores for ROE pupils, for Empathy Subscales**

| Measure | High Deprivation *Difference Score (Post-test average – pre-test average)* | Low Deprivation *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Emotional Empathy | .71 | -.80 | Yes |

There was a significant difference between the Emotional Empathy scores of pupils living in high deprivation areas (which increased) and the Emotional Empathy scores of pupils living in low deprivation areas (which decreased).

Control pupils

**Table 2.8: Difference Scores for control pupils, for Empathy Subscales**

| Measure | High Deprivation *Difference Score (Post-test average – pre-test average)* | Low Deprivation *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Sympathy | .37 | -.98 | Yes |

There was a significant difference between the Sympathy scores of pupils living in high deprivation areas (which increased) and the Sympathy scores of pupils living in low deprivation areas (which decreased).

**Gender**

Girls

**Table 2.9: Difference Scores for Girls, for Empathy Subscales**

| Measure | ROE *Difference Score (Post-test average – pre-test average)* | Control *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Cognitive Empathy | 1.34 | -1.24 | Yes |

There was a significant difference between ROE girls' Cognitive Empathy score (which increased) and control girls' score (which decreased).

Boys
There were no significant differences between ROE boys' scores and control boys' scores for any of the empathy subscales.

ROE pupils
No significant differences were found when ROE girls' scores were compared to ROE boys' scores for any of the empathy subscales.

Control pupils
No significant differences were found when control girls' scores were compared to control boys' scores for any of the empathy subscales.

## **Younger children living in the household v lone child**

Lone children

**Table 2.10: Difference Scores for Lone Children, for Empathy Subscales**

| Measure | ROE<br>*Difference Score*<br>*(Post-test average – pre-test average)* | Control<br>*Difference Score*<br>*(Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Cognitive Empathy | 1.53 | -1.10 | Yes |
| Emotional Empathy | .03 | -1.65 | Yes |

There was a significant difference between ROE pupils' Cognitive Empathy and Emotional Empathy scores (which increased) and control pupils' scores (which decreased).

Younger children living in the household
No significant differences were found between ROE and control pupils' scores for any of the empathy subscales.

ROE pupils
No significant differences were found when the scores of ROE pupils with younger children living in the household were compared to the scores of ROE pupils with no siblings.

Control pupils
No significant differences were found when the scores of control pupils with younger children living in the household were compared to the scores of control pupils with no siblings.

## *4.2 Prosocial Behaviour*

Pupils completed the Altruism Drawing Measure which assesses helping, sharing, giving and co-operation. Teachers also completed the Strengths and Difficulties Questionnaire (SDQ) for each pupil which has a Prosocial Behaviour ('Voluntary behaviour that benefits others or promotes harmonious relations with others') subscale. It was hypothesised that scores on each of these measures would increase more in the ROE group than in the control group from pre-test to post-test.

### 4.2.1 Phase 1&2

**Table 3.1: Difference Scores for ROE Programme and Control Groups, for Prosocial Behaviour Subscales**

| Measure | ROE Difference Score (Post-test average – pre-test average) | Control Difference Score (Post-test average – pre-test average) | Significant difference between ROE and control groups Difference Scores |
|---|---|---|---|
| Altruism Drawing Measure | .50* | .52* | No |
| SDQ Prosocial Behaviour | .64* | -.37* | Yes |

\* Significant increase/decrease from pre-test to post-test

<u>Pupil rated</u>
Both ROE and control pupils' scores on the Altruism Drawing Measure increased from pre-test to post-test.

No statistically significant differences were found between the difference scores (post-test score – pre-test score) for ROE and control pupils on the Altruism Drawing Measure.

Both ROE and control pupils' scores increased significantly from pre-test to post-test on the Altruism Drawing Measure.

<u>Teacher rated</u>
For teacher rated Prosocial Behaviour ROE pupils' score increased compared to control pupils' score which decreased from pre-test to post-test.

A significant difference was found between the difference scores (post-test score – pre-test score) for ROE and control pupils for teacher rated Prosocial Behaviour.

ROE pupils' Prosocial Behaviour score (as rated by teachers) significantly increased from pre-test to post-test.

Control pupils' Prosocial Behaviour score (as rated by teachers) significantly decreased from pre-test to post-test.

### 4.2.2 Phase 1

**Table 3.2: Difference Scores for ROE Programme and Control Groups, for Prosocial Behaviour Subscales**

| Measure | ROE Difference Score (Post-test average – pre-test average) | Control Difference Score (Post-test average – pre-test average) | Significant difference between ROE and control groups Difference Scores |
|---|---|---|---|
| Altruism Drawing Measure | .36* | .06 | No |
| SDQ Prosocial Behaviour | .41* | -.68* | Yes |

* Significant increase/decrease from pre-test to post-test

<u>Pupil rated</u>
When Phase 1 data was analysed separately, both ROE and control pupils' scores on the Altruism Drawing Measure increased from pre-test to post-test.

No significant differences were found between the difference scores (post-test score – pre-test score) for ROE and control pupils in Phase 1 on the Altruism Drawing Measure.

ROE pupils' score increased significantly from pre-test to post-test on the Altruism Drawing Measure. Although the control groups' score increased, this was not statistically significant.

<u>Teacher rated</u>
For teacher rated Prosocial Behaviour ROE pupils' score increased compared to control pupils' score which decreased.

A significant difference between ROE and control pupils' difference scores in Phase 1 was found for teacher rated Prosocial Behaviour.

Phase 1 ROE pupils' Prosocial Behaviour (teacher rated) score significantly increased from pre-test to post-test.

Phase 1 control pupils' Prosocial Behaviour (teacher rated) score significantly decreased from pre-test to post-test.

## 4.2.3 Phase 2

**Table 3.3: Difference Scores for ROE Programme and Control Groups, for Prosocial Behaviour Subscales**

| Measure | ROE Difference Score (Post-test average – pre-test average) | Control Difference Score (Post-test average – pre-test average) | Significant difference between ROE and control groups Difference Scores |
|---|---|---|---|
| Altruism Drawing Measure | .74* | .92* | No |
| SDQ Prosocial Behaviour | 1.03* | - .09 | Yes |

* Significant increase/decrease from pre-test to post-test

<u>Pupil rated</u>
When Phase 2 data was analysed separately, both ROE and control pupils' scores on the Altruism Drawing Measure increased from pre-test to post-test.

No significant differences were found between the difference scores (post-test score – pre-test score) for ROE and control pupils in Phase 2 on the Altruism Drawing Measure.

Both ROE and control pupils' scores increased significantly from pre-test to post-test on the Altruism Drawing Measure.

Teacher rated
For teacher rated Prosocial Behaviour ROE pupils' score increased compared to control pupils' score which decreased.

A significant difference between Phase 2 ROE and control pupils' difference scores was found for teacher rated Prosocial Behaviour.

Phase 2 ROE pupils' Prosocial Behaviour (teacher rated) score significantly increased from pre-test to post-test.

Phase 2 control pupils' Prosocial Behaviour (teacher rated) score did not significantly decrease from pre-test to post-test.

Video Observations
Video observations with four ROE pupils in three Phase 2 schools were conducted. The three schools were of varying deprivation levels: School A – high deprivation (Level 1), School B – medium/high deprivation (level 4) and School C – medium/low deprivation (level 6).

Table 3.4: Counts of Prosocial Behaviours at each ROE stage

| | Counts of Prosocial Behaviour at each ROE stage | | | | | | | | | | | | | | |
| | School A | | | | | School B | | | | | School C | | | | |
| | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | Abs | 8 | 11 | 9 | 15 | 10 | 13 | 15 | 15 | 23 | 12 | 14 | 16 | 14 |
| | 9 | 13 | 12 | 15 | 11 | 8 | 13 | 11 | 11 | 18 | 26 | 14 | 15 | 15 | 14 |
| | 16 | 16 | Abs | 14 | 9 | 21 | 9 | 19 | 17 | 14 | 23 | 13 | 15 | 16 | 10 |
| | 13 | 11 | 18 | 9 | 11 | 19 | Abs | 13 | 10 | 11 | 24 | 11 | 11 | 11 | 14 |
| Total | 48 | *** | *** | 49 | 40 | 63 | *** | 56 | 53 | 58 | 96 | 50 | 55 | 58 | 52 |

Abs = absent at filming
*** Denotes that as pupils were absent cannot make fair comparison

- In School A overall there was a decrease in observed Prosocial Behaviours from pre-test (48 counts) to post-test (40 counts).
    - three pupils decreased
    - one pupil increased
- In School B overall there was a decrease in observed Prosocial Behaviours from pre-test (63 counts) to post-test (58 counts).
    - two pupils decreased
    - one pupil staying the same
    - one pupil increased
- In School C overall there was a decrease in observed Prosocial Behaviours from pre-test (96 counts) to post-test (52 counts).
    - all four pupils decreased

## 4.2.4 Further Analysis

Only statistically significant results are reported within the Further Analysis sections of this report.

**Phase 1 v Phase 2**

ROE pupils

**Table 3.5: Difference Scores for ROE Programme, for Prosocial Subscales**

| Measure | Phase 1 *Difference Score (Post-test average – pre-test average)* | Phase 2 *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial | .41 | 1.03 | Yes |

No significant differences between Phase 1 ROE pupils' scores and Phase 2 ROE pupils' scores were found for the Altruism Drawing Measure.

A significant difference between Phase 1 and Phase 2 pupils' scores was found for teacher rated Prosocial Behaviour. Both Phase 1 and Phase 2 pupils' Prosocial Behaviour scores increased from pre-test to post-test however, Phase 2 pupils' score increased significantly more than Phase 1 pupils' score as rated by teachers.

Control pupils

**Table 3.6: Difference Scores for Control Group, for Prosocial Subscales**

| Measure | Phase 1 *Difference Score (Post-test average – pre-test average)* | Phase 2 *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Altruism Drawing Measure | .06 | .91 | Yes |
| SDQ Prosocial | -.68 | -.09 | Yes |

A significant difference between Phase 1 and Phase 2 control pupils' scores was found for the Altruism Drawing Measure. Both in Phase 1 and Phase 2 control pupils' scores increased on this measure with Phase 2 pupils' score increasing significantly more.

A significant difference between Phase 1 and Phase 2 pupils was found. Both Phase 1 and Phase 2 pupils' scores in the control group decreased in Prosocial Behaviour as rated by teachers with Phase 1 pupils' score decreasing significantly more than Phase 2 pupils' score for Prosocial Behaviour from pre-test to post-test.

**P4 v P5**

P4 pupils

**Table 3.7: Difference Scores for P4 pupils, for Prosocial Behaviour Subscales**

| Measure | ROE *Difference Score (Post-test average – pre-test average)* | Control *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | .86 | -.15 | Yes |

A significant difference was found between the ROE and control groups' scores for teacher rated Prosocial Behaviour, with the ROE groups' score increasing and the control groups' score decreasing.

P5 pupils

**Table 3.8: Difference Scores for P5 pupils, for Prosocial Behaviour Subscales**

| **Measure** | **ROE** *Difference Score (Post-test average – pre-test average)* | **Control** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | .36 | -.68 | Yes |

A significant difference was found between the ROE and control groups' scores for teacher rated Prosocial Behaviour, with the ROE groups' score increasing and the control groups' score decreasing.

ROE pupils

**Table 3.9: Difference Scores for ROE pupils, for Prosocial Behaviour Subscales**

| **Measure** | **P4** *Difference Score (Post-test average – pre-test average)* | **P5** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | .86 | .36 | Yes |

Both P4 and P5 pupils' scores increased for teacher rated Prosocial Behaviour. However, there was a significant difference with P4 pupils' score increasing significantly more than P5 pupils' score.

Control pupils

**Table 3.10: Difference Scores for Control pupils, for Prosocial Behaviour Subscales**

| **Measure** | **P4** *Difference Score (Post-test average – pre-test average)* | **P5** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | -.15 | -.68 | Yes |

Both P4 and P5 pupils' scores decreased in teacher rated Prosocial Behaviour. However, there was a significant difference with P4 pupils' score decreasing significantly less than P5 pupils' score.

**Deprivation Level**

ROE pupils

**Table 3.11: Difference Scores for ROE pupils, for Prosocial Behaviour Subscales**

| **Measure** | **High Deprivation** *Difference Score (Post-test average – pre-test average)* | **Low Deprivation** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Altruism Drawing Measure | .26 | .81 | Yes |

There was a significant difference on the Altruism Drawing Measure with the scores of pupils living in low deprivation areas increasing significantly more than the scores of pupils living in high deprivation areas.

Control pupils

**Table 3.12: Difference Scores for control pupils, for Prosocial Behaviour Subscales**

| Measure | **High Deprivation** *Difference Score (Post-test average – pre-test average)* | **Low Deprivation** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | -.54 | -.05 | Yes |

There was a significant difference in teacher rated Prosocial Behaviour with the scores of pupils living in low deprivation areas decreasing significantly less than the scores of pupils living in high deprivation areas.

**Gender**

Girls

**Table 3.13: Difference Scores for Girls, for Prosocial Behaviour Subscales**

| Measure | **ROE** *Difference Score (Post-test average – pre-test average)* | **Control** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | .39 | -.30 | Yes |

A significant difference was found between ROE and control girls' scores on teacher rated Prosocial Behaviour with the ROE girls' score increasing and the control girls' score decreasing.

Boys

**Table 3.14: Difference Scores for Boys, for Prosocial Behaviour Subscales**

| Measure | **ROE** *Difference Score (Post-test average – pre-test average)* | **Control** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | .90 | -.43 | Yes |

A significant difference was found between ROE and control boys' scores on teacher rated Prosocial Behaviour with ROE boys' score increasing and control boys' score decreasing.

ROE pupils

**Table 3.15: Difference Scores for ROE pupils, for Prosocial Behaviour Subscales**

| Measure | **Girls** *Difference Score (Post-test average – pre-test average)* | **Boys** *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | .39 | .90 | Yes |

A significant difference was found between ROE girls' and boys' scores on teacher rated Prosocial Behaviour with ROE boys' score increasing significantly more than ROE girls' score.

Control pupils
No significant differences were found when control girls' scores were compared to control boys' scores.

## Younger children living in the household v lone child

Lone children

**Table 3.16: Difference Scores for Lone Children, for Prosocial Behaviour Subscales**

| Measure | ROE<br>*Difference Score<br>(Post-test average – pre-test average)* | Control<br>*Difference Score<br>(Post-test average – pre-test average)* | *Significant difference<br>between ROE and control<br>groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | .60 | -.44 | Yes |

There was a significant difference between ROE pupils' scores (which increased) and control pupils 'scores (which decreased) in teacher rated Prosocial Behaviour.

Younger children living in the household

**Table 3.17: Difference Scores for Pupils with Younger Siblings, for Prosocial Behaviour Subscales**

| Measure | ROE<br>*Difference Score<br>(Post-test average – pre-test average)* | Control<br>*Difference Score<br>(Post-test average – pre-test average)* | *Significant difference<br>between ROE and control<br>groups Difference Scores* |
|---|---|---|---|
| SDQ Prosocial Behaviour | .68 | -.29 | Yes |

There was a significant difference between ROE pupils' scores (which increased) and control pupils' scores (which decreased) in teacher rated Prosocial Behaviour.

ROE pupils
No significant differences were found when the scores of ROE pupils with younger siblings were compared to the scores of ROE pupils without younger siblings for Prosocial Behaviour.

Control pupils
No significant differences were found when the scores of control pupils with younger siblings were compared to the scores of control pupils without younger siblings for Prosocial Behaviour.

## *4.3 Anger Management/Aggression*

Pupils completed the Child Anger Management Scale which measures: Inhibition (turning emotion inward), Dysregulated Expression (the expression of emotion in ways that are non-constructive) and Emotion Regulation (strategies for coping with anger by controlling specific emotion behaviours).

Teachers also completed the Strengths and Difficulties Questionnaire (SDQ) which measures: Total Difficulties which comprises of scales measuring Emotional Symptoms, Conduct Problems, Hyperactivity and Peer Problems.

It was hypothesised that the scores in Inhibition, Dysregulated Expression and Total Difficulties would decrease and scores Emotion Regulation would increase more in the ROE group than the control group from pre-test to post-test.

### 4.3.1 Phase 1&2

**Table 4.1: Difference Scores for ROE Programme and Control Groups, for Anger Management/Aggression Subscales**

| Measure | ROE<br>*Difference Score*<br>*(Post-test average – pre-test average)* | Control<br>*Difference Score*<br>*(Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Inhibition | -.33* | .16 | Yes |
| Dysregulated Expression | -.15 | -.14 | No |
| Emotion Regulation | -.11 | .07 | No |
| SDQ Total Difficulties | -.11 | .57* | Yes |

* Significant increase/decrease from pre-test to post-test.

Pupil rated
ROE pupils' Inhibition (turning emotion inward) score decreased compared to control pupils' score which increased. However, For Dysregulated Expression both ROE and control pupils' scores decreased and for Emotion Regulation ROE pupils' score actually decreased compared to control pupils' score which increased.

A significant difference was found between the difference scores (post-test score – pre-test score) for ROE and control pupils for Inhibition. There was no significant difference between group difference scores for Dysregulated Expression and Emotion Regulation.

ROE pupils' Inhibition score significantly decreased from pre-test to post-test.

Control pupils' Inhibition score did not significantly increase from pre-test to post-test.

Teacher rated
For teacher rated Total Difficulties ROE pupils' score decreased and control pupils' score increased.

A significant difference was found between the difference scores (post-test score – pre-test score) for ROE and control pupils for teacher rated Total Difficulties.

Teacher rated Total Difficulties score for ROE pupils did not significantly decrease from pre-test to post-test.

Teacher rated Total Difficulties score for control pupils significantly increased from pre-test to post-test.

### 4.3.2 Phase 1

**Table 4.2: Difference Scores for ROE Programme and Control Groups, for Anger Management/Aggression Subscales**

| Measure | ROE *Difference Score (Post-test average – pre-test average)* | Control *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Inhibition | -.44* | .13 | Yes |
| Dysregulated Expression | -.11 | .02 | No |
| Emotion Regulation | -.33* | .18 | Yes |
| SDQ Total Difficulties | .38 | 1.70* | Yes |

* Significant increase/decrease from pre-test to post-test.

<u>Pupil rated</u>
When Phase 1 data was analysed separately, ROE pupils' Inhibition score decreased compared to control pupils' score which increased. For Dysregulated Expression ROE pupils' score decreased while control pupils' score increased slightly and for Emotion Regulation ROE pupils' score decreased compared to control pupils' score who increased.

A significant difference was found between the difference scores (post-test score – pre-test score) for ROE and control pupils for Inhibition and Emotion Regulation, but not for Dysregulated Expression.

ROE pupils' Inhibition and Emotion Regulation scores significantly decreased from pre-test to post-test.

Control pupils' Inhibition and Emotion Regulation scores did not significantly increase from pre-test to post-test.

<u>Teacher rated</u>
For teacher rated Prosocial Behaviour both ROE and control pupils' scores increased.

A significant difference was found for Total Difficulties with control pupils' score increasing significantly more than ROE pupils' score.

### 4.3.3 Phase 2

**Table 4.3: Difference Scores for ROE Programme and Control Groups, for Anger Management/Aggression Subscales (Phase 2)**

| Measure | ROE *Difference Score (Post-test average – pre-test average)* | Control *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Inhibition | - .14 | .18 | No |
| Dysregulated Expression | - .23 | - .29* | No |
| Emotion Regulation | .25 | - .02 | No |
| SDQ Total Difficulties | -.95* | - .38 | No |

\* Significant increase/decrease from pre-test to post-test.

Pupil rated
When Phase 2 data was analysed separately, ROE pupils' Inhibition score decreased compared to control pupils' score which increased. Both ROE and control pupils' scores decreased in Dysregulated Expression and ROE pupils' score increased in Emotion Regulation compared to control pupils' score which decreased slightly.

No significant differences were found between the difference scores (post-test score – pre-test score) for ROE and control pupils for any of the self rated anger management subscales.

Teacher rated
For teacher rated Total Difficulties both ROE and control pupils' scores decreased.

No significant differences were found between the difference scores (post-test score – pre-test score) for ROE and control pupils for teacher rated Total Difficulties.

Video Observations
Video observations with four ROE pupils in three Phase 2 schools were conducted. The three schools were of varying deprivation levels: School A – high deprivation (Level 1), School B – medium/high deprivation (level 4) and School C – medium/low deprivation (level 6).

**Table 4.4: Counts of Aggressive Behaviours at each ROE stage**

| | Counts of Aggressive Behaviours at each ROE stage | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | School A | | | | | School B | | | | | School C | | | | |
| | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE | Pre-ROE | Theme 2 | Theme 4 | Theme 6 | Post-ROE |
| | 1 | Abs | 2 | 0 | 0 | 6 | 0 | 2 | 2 | 2 | 7 | 0 | 0 | 0 | 0 |
| | 0 | 3 | 2 | 2 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1 | 3 | Abs | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 3 | 1 | 2 | 2 | 0 |
| | 1 | 1 | 1 | 1 | 1 | 2 | Abs | 3 | 9 | 3 | 2 | 0 | 0 | 0 | 0 |
| Total | 3 | *** | *** | 3 | 1 | 13 | *** | 6 | 12 | 5 | 12 | 1 | 2 | 2 | 0 |

Abs = absent at filming
\*\*\* Denotes that as pupils were absent cannot make fair comparison

- In School A overall there was a decrease in observed aggressive behaviours from pre-test (3 counts) to post-test (1 count).
  - two pupils decreased
  - two pupils remained the same.
- In School B overall there was a decrease in observed aggressive behaviours from pre-test (13 counts) to post-test (5 counts).

- three pupils decreased
- one pupil increased
- In School C overall there was a decrease in observed aggressive behaviours from pre-test (12 counts) to post-test (0 counts).
  - three pupils decreased
  - one pupil remained the same

## 4.3.4 Further Analysis

### Phase 1 v Phase 2

ROE pupils

**Table 4.5: Difference Scores for ROE Programme, for Anger Management Subscales ((Phase 1 v Phase 2)**

| Measure | Phase 1 *Difference Score (Post-test average – pre-test average)* | Phase 2 *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| CAMS Emotion Regulation | -.33 | .26 | Yes |
| SDQ Total Difficulties | .38 | -.95 | Yes |

A significant difference between Phase 1 and Phase 2 ROE pupils' scores was found for:
- Emotion Regulation – Phase 1 pupils' scores decreased from pre-test to post-test compared to Phase 2 pupils' score which increased. This difference was significant. Phase 1 pupils' score significantly decreased from pre-test to post-test whereas Phase 2 pupils' score did not significantly increase.
- Total Difficulties (teacher rated) – Phase 1 pupils' score increased from pre-test to post-test compared to Phase 2 pupils' score which decreased. This difference was significant. Phase 1 pupils' score did not significantly increase from pre-test to post-test whereas Phase 2 pupils' score significantly decreased in Total Difficulties as rated by teachers.

Control pupils

**Table 4.6: Difference Scores for Control Group, for Anger Management Subscales ((Phase 1 v Phase 2)**

| Measure | Phase 1 *Difference Score (Post-test average – pre-test average)* | Phase 2 *Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Total Difficulties | 1.70 | -.42 | Yes |

A significant difference between Phase 1 and Phase 2 control pupils' scores was found for:
- Total Difficulties (teacher rated) – Phase 1 pupils' score increased from pre-test to post-test compared to Phase 2 pupils' score which decreased. There was a significant difference between Phase 1 and Phase 2 control pupils' scores for teacher rated Total Difficulties. Phase 1 pupils' score significantly increased in teacher rated Total Difficulties from pre-test to post-test whereas Phase 2 pupils' score did not significantly decrease.

## P4 v P5

P4 pupils
No significant differences were found between P4 ROE and P4 control pupils' scores for any of the anger management subscales or teacher rated Total Difficulties.

P5 pupils

**Table 4.7: Difference Scores for P5 pupils, for Anger Management/Aggression Subscales**

| Measure | ROE<br>*Difference Score*<br>*(Post-test average – pre-test average)* | Control<br>*Difference Score*<br>*(Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Total Difficulties | -.45 | 1.49 | Yes |

A significant difference between P5 ROE and P5 control pupils' scores was found for teacher rated Total Difficulties, with ROE pupils' score decreasing and control pupils' score increasing from pre-test to post-test.

ROE pupils
No significant differences were found between P4 and P5 ROE pupils' scores for any of the anger management subscales or teacher rated Total Difficulties.

Control pupils

**Table 4.8: Difference Scores for control pupils, for Anger Management/Aggression Subscales**

| Measure | P4<br>*Difference Score*<br>*(Post-test average – pre-test average)* | P5<br>*Difference Score*<br>*(Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Total Difficulties | .26 | 1.49 | Yes |

A significant difference between P4 and P5 control pupils' scores was found for teacher rated Total Difficulties, both P4 and P5 pupils' scores increased in Total Difficulties, however P5 pupils' score increased significantly more.

## Deprivation Level

There were no significant differences when the deprivation level analysis was conducted for the anger management subscales or teacher rated Total Difficulties.

## Gender

Girls

**Table 4.9: Difference Scores for Girls, for Anger Management/Aggression Subscales**

| Measure | ROE<br>*Difference Score*<br>*(Post-test average – pre-test average)* | Control<br>*Difference Score*<br>*(Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| CAMS Inhibition | -.40 | .17 | Yes |

A significant difference was found between ROE girls' and control girls' scores for Inhibition with ROE girls' score decreasing and control girls' score increasing.

Boys

**Table 4.10: Difference Scores for Boys, for Anger Management/Aggression Subscales**

| Measure | ROE<br>*Difference Score (Post-test average – pre-test average)* | Control<br>*Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Total Difficulties | -.49 | .85 | Yes |

A significant difference was found between ROE boys' and control boys' scores for teacher rated Total Difficulties with ROE boys' score decreasing and control boys' score increasing.

ROE pupils
No significant differences were found between ROE girls' and boys' scores for any of the anger management subscales or teacher rated Total Difficulties.

Control pupils
No significant differences were found between control girls' and boys' scores for any of the anger management subscales or teacher rated Total Difficulties.

**Younger children in the household v Lone child**

Lone children

**Table 4.11: Difference Scores for Lone Children, for Anger Management/Aggression Subscales**

| Measure | ROE<br>*Difference Score (Post-test average – pre-test average)* | Control<br>*Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| CAMS Inhibition | -.39 | .55 | Yes |
| CAMS Emotion Regulation | -.08 | .52 | Yes |

A significant difference was found between lone children in the ROE and control groups' scores for Inhibition and Emotion Regulation. For both of these subscales ROE pupils' scores decreased and control pupils' scores increased.

Younger children living in the household

**Table 4.12: Difference Scores for Pupils with Younger Siblings, for Anger Management/Aggression Subscales**

| Measure | ROE<br>*Difference Score (Post-test average – pre-test average)* | Control<br>*Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| SDQ Total Difficulties | -.22 | .97 | Yes |

A significant difference was found between ROE and control pupils' score for teacher rated Total Difficulties. ROE pupils' score decreased and control pupils' score increased.

No significant differences were found between the scores of ROE pupils who had younger children in the household and the scores of ROE pupils who were lone children for any of the anger management subscales or teacher rated Total Difficulties.

Control pupils

**Table 4.13: Difference Scores for Control Pupils, for Anger Management/Aggression Subscales**

| Measure | With Younger Siblings<br>*Difference Score<br>(Post-test average – pre-test average)* | Lone Child<br>*Difference Score<br>(Post-test average – pre-test average)* | *Significant difference<br>between ROE and control<br>groups Difference Scores* |
|---|---|---|---|
| CAMS Inhibition | -.24 | .55 | Yes |
| CAMS Emotion Regulation | -.39 | .52 | Yes |

A significant difference was found when the scores of control pupils who had younger children in the household were compared to the scores of control pupils who were lone children for Inhibition and Emotion Regulation. For both Inhibition and Emotion Regulation the scores of control pupils with younger children living in the household decreased compared to the scores for control pupils who were lone children which increased.

## *4.4 Wellbeing*

Pupils completed the Stirling Children's Wellbeing Scale which measures:
- o **Positive Emotion:** Subjective (hedonic) wellbeing – primarily concerned with the immediate states of pleasure and happiness. Seen to comprise of life satisfaction, the presence of positive mood and the absence of negative mood
- o **Positive Outlook**: Psychological (eudaimonic) wellbeing – concerned with the actualisation of human potentials. Based on the eudaimonic perspective and seen as having the components of autonomy, personal growth, self acceptance, life purpose, mastery and positive relatedness)
- o **Social Desirability:** observed when participants give answers that they think the researchers want to hear or rate all items with the same response. Included to ensure that the participants were engaging in the items on the scale and to provide a helpful measure of response set/socially desirable answers.

The measure suggests that if pupils score less than 3 or above 14 on the social desirability scale then they may have been completing the questionnaire in a socially desirable way. Therefore after the initial analysis had been run pupils who scored 3 or less and 14 or more were removed, as were pupils less than 8 to minimise the confounding effects. However no significant differences were found following this analysis.

It was hypothesised that the scores in Positive Emotion and Positive Outlook would increase more in the ROE group than the control group from pre-test to post-test.

## 4.4.1 Phase 1&2

**Table 5.1: Difference Scores for ROE Programme and Control Groups, for Wellbeing Subscales**

| Measure | ROE<br>*Difference Score (Post-test average – pre-test average)* | Control<br>*Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Positive Emotion | -.70* | -.34 | No |
| Positive Outlook | -.66* | -.63* | No |
| Social Desirability | -.45* | -.64* | No |

* Significant increase/decrease from pre-test to post-test.

Both ROE and control pupils' scores decreased on all three subscales of the Stirling Children's Wellbeing Scale.

No significant differences between ROE and control pupils' scores were found for any of the wellbeing subscales.

## 4.4.2 Phase 1

**Table 5.2: Difference Scores for ROE Programme and Control Groups, for Wellbeing Subscales (Phase 1)**

| Measure | ROE<br>*Difference Score (Post-test average – pre-test average)* | Control<br>*Difference Score (Post-test average – pre-test average)* | *Significant difference between ROE and control groups Difference Scores* |
|---|---|---|---|
| Positive Emotion | -.51 | -.88 | No |
| Positive Outlook | -.67* | -.77* | No |
| Social Desirability | -.58* | -.60* | No |

* Significant increase/decrease from pre-test to post-test.

When Phase 1 data was analysed separately, both ROE and control pupils' scores decreased on all three subscales of the Stirling Children's Wellbeing Scale.

No significant differences between ROE and control pupils' scores were found for any of the wellbeing subscales.

## 4.4.3 Phase 2

**Table 5.3: Difference Scores for ROE Programme and Control Groups, for Wellbeing Subscales (Phase 2)**

| Measure | ROE Difference Score (Post-test average – pre-test average) | Control Difference Score (Post-test average – pre-test average) | Significant difference between ROE and control groups Difference Scores |
|---|---|---|---|
| Positive Emotion | -1.02 | .14 | No |
| Positive Outlook | - .65 | - .51 | No |
| Social Desirability | - .22 | - .69* | No |

\* Significant increase/decrease from pre-test to post-test.

When Phase 2 data was analysed separately, both ROE and control pupils' scores decreased on the Positive Outlook and Social Desirability subscales of the measure. ROE pupils' score also decreased on Positive Emotion compared to control pupils' score which increased on this subscale.

No significant differences between ROE and control pupils' scores were found for any of the wellbeing subscales.

### 4.4.4 Further Analysis

None of the further analyses conducted showed any significant results for the Stirling Children's Wellbeing Scale.

## 4.5 Class Climate

Both pupils and teachers completed the My Class Inventory – Short Form which measures classroom:
- o Satisfaction - extent to which students like their class.
- o Friction - extent of tension and quarrelling amongst students.
- o Competitiveness - extent to which the students perceive an atmosphere of competition in the classroom.
- o Difficulty - extent to which students have difficulty with the work of the class.
- o Cohesion - extent students know, help and are friendly towards each other.

Pupils and teachers completed an Actual and Preferred form at pre-test and post-test.

It was hypothesised that there would be a significant positive impact on the ROE pupils' perceptions of their class climate.

Only ROE classes were included in the analysis of this measure. Results were analysed by class for the pupil rated questionnaires.

Pupils
Overall there were not many differences in pupils' Classroom Climate score from pre-test to post-test in any of the 19 ROE classes.

The most positive effect on pupils' Class Climate score was for Difficulty which decreased from pre-test to post-test.
- Satisfaction and Cohesion significantly decreased in more classes than they increased
- Friction and Competitiveness increased in more classes than they decreased.

The majority of classes who reported their Actual Class Satisfaction, Friction, Competitiveness, Difficulty and Cohesion to be closely related to their Preferred at post-test had similar reports at pre-test indicating that the programme only had a small impact in a few classes on Class Climate.

Teachers
Teachers' results could not be analysed by class due to there being only one teacher response per class. Therefore, teacher ratings were analysed together.

The teachers' report of class climate was more positive than the pupils.

Teachers reported:
- A decrease in Classroom Satisfaction was reported by eight teachers. However, seven teachers reported an increase and four reported no change in Classroom Satisfaction.
- A decrease in Friction was reported by 11 teachers; seven teachers reported an increase and one teacher reported no change in Classroom Friction.
- A decrease in Classroom Competitiveness was reported by 11 teachers; six teachers reported an increase and two teachers reported no change in Classroom Competitiveness.
- A decrease in Classroom Difficulty was reported by 10 teachers; eight teachers reported an increase and one teacher reported no change in Classroom Difficulty.
- An increase in Classroom Cohesion was reported by 13 teachers; three teachers reported a decrease and three teachers reported no change in Classroom Cohesion.

## *4.6 Group Task*

Two measures (KoID, 3 questions and I-FEEL, 2 questions) were included in the group task analysis. Each question was analysed individually.

Thematic analysis generated varying numbers of themes and sub-themes across the questions which are noted in the tables below. Most themes and sub-themes remained the same at pre-intervention and post-intervention between Phases and ROE and control groups with the following exceptions:

**At pre-intervention**:

**KoID:**
*What are some ways that babies can learn?*
- In Phase 1 a sub-theme of 'Mistakes/Accidents' (within the main theme of 'Physical/Sensory/Experiential') was evident in the ROE group but not in the control group.
- In Phase 2 a sub-theme of 'Mistakes/Accidents' (within the main theme of 'Physical/Sensory/Experiential') was evident in the control group but not in the ROE group. .

**IFEEL**
*What are some reasons that this baby cries?*
- In Phase 1 a sub-theme of 'Dislikes' (within the main theme of 'Aversion') was evident in the ROE group but not the control group.
- In Phase 2 a sub-theme of 'Dislikes' (within the main theme of 'Aversion') was evident in the control group but not in the ROE group.

*What things can you do to help a baby who is crying?*
- In Phase 1 and 2 a sub-theme of 'Safety' (within the main theme of 'Care') was evident in the control group but not in the ROE group.
- In Phase 1 and 2 sub-themes of 'Stop Negative Behaviours', 'Do Positive Behaviours' and 'Negative Behaviours' (within the main theme of 'Personal Behaviours') were evident in the control group but not in the ROE group.

**At post-intervention**:

**KoID:**
*What are some ways that babies can get hurt?*

- In Phase 1 and 2 a theme 'Sensory/Emotional' was evident in the control group but not in the ROE group.

*What are some ways that babies can learn?*

- In Phase 2 a sub-theme of 'Informal' (within the theme 'Learning Environments') was evident in the control group but not in the ROE group.
- In Phase 1 and 2 a sub-theme of 'Love/ROE' (within the main theme 'Learning from Others') was evident in the ROE group but not in the control group.

**IFEEL**

*What things can you do to help a baby who is crying?*

- In Phase 1 and 2 a sub-theme of 'Safety' (within the main theme of 'Care') was evident in the control group but not in the ROE group.
- In Phase 1 sub-themes of 'Stop Negative Behaviours', 'Do Positive Behaviours' and 'Negative Behaviours' (within the main theme of 'Personal Behaviours'), were evident in the control group but not in the ROE group.
- In Phase 2 sub-themes of 'Stop Negative Behaviours' and 'Negative Behaviours' (within the main theme of 'Personal Behaviours') were evident in the ROE group but not in the control group.

**Differences between pre-intervention and post intervention**
**KoID:**

*What are some ways that babies can learn?*

- In Phase 1 and 2 ROE produced a sub-theme of 'Love/ROE' (within the theme 'Learning from Others'), which was not seen at pre-intervention or in control at post-intervention.

**IFEEL**

*What things can you do to help a baby who is crying?*

- In Phase 2 ROE produced the sub-theme of 'Passively Negative Behaviours' which was not in pre-intervention or in control post-intervention.
- In Phase 2 the sub-themes 'Positive Behaviours' and 'Verbally Negative Behaviours' were seen at pre-intervention control but not in post-intervention control or ROE.
- In Phase 1 the sub-theme 'Physically Negative Behaviours' was produced in pre-intervention control but not in post-intervention control or ROE.

Whilst the vast majority of responses were suitable for coding, a small number of responses were considered to be 'uncodeable' and were classified as such. Such responses were found to be lacking in sufficient context by the individual coder in relation to the question they were examining (e.g. 'At night', 'Park' and 'For no reason'). Tables of main themes, sub-themes and all recorded responses for each question for Phase 1 and Phase 2 are illustrated in Appendices 2-11.

**Themes**

**Knowledge of Infant Development**

*Question 1 (KoID): What are some ways that babies can get hurt?*

Thematic analysis of responses to the first question examining knowledge of infant development "*What are some ways that babies can get hurt?*" produced four main themes with five sub-themes in total. Themes remained similar throughout both Phases for ROE and control groups. Differences within themes/sub-themes are noted above and are highlighted in tables with an * (Appendices 2 and 3).

**Table 6.1: Group Task - What are some ways that babies can get hurt?**

| Theme | Definition | Sub-theme | Definition | Example |
|---|---|---|---|---|
| **1. Medical Issue** | Hurt caused to the baby due to a medical condition or issue requiring medical attention. | - | - | 'Broken leg/arm' 'Soft spot on head' |
| **2. Accidental Harm** | Accidental harm caused to a baby where there was no intent to hurt the baby. | Harm Caused By Self | Accidental harm caused by the baby's own actions | 'Falling down stairs' 'Choking' 'Bumping head' |
| | | Harm By Another/By Object | Accidental harm caused by another person or object | 'Being dropped' 'Drop baby' 'Hit by car/car crash' |
| | | Dangerous Object/Substance/ Environment | Accidental harm caused by a baby being in danger in some way or interacting with a dangerous substance or object | 'Picks up glass' 'Burn themselves' |
| **3. Purposeful Harm** | Harm caused to a baby where there was intention to harm the baby. | Neglected | Purposeful harm caused by the baby not being appropriately cared for or looked after | 'Being left alone' 'Not having their nappy changed' |
| | | Attacked/Abused | Purposeful harm inflicted by another person or animal | 'Hit them' 'An animal attacking them' |
| **4. Sensory/Emotional\*** | Hurt caused by external sensory or emotional stimuli. | - | - | 'Loud noises' 'Being shouted at' |

*NB: In addition to 'uncodeable' answers found across analyses of all 5 questions, some responses to this question were found to be 'Relevant but Uncodeable'. This category included answers lacking in sufficient context, but may be considered a relevant reason to cause hurt if context was speculated (e.g.: 'climbing', 'swimming pool' and 'never hit a baby'. However, as context of such responses were unclear, these answers could not be coded (appendix xx).*

*Question 2 (KoID): What are some ways that babies can learn?*

Thematic analysis of responses to the second question "What are some ways that babies can learn?" produced four main themes with 12 sub-themes in total. Themes were similar throughout both Phases and ROE and control groups, with the exception of the additional sub theme of 'Love/ROE' found within main theme Theme 2: 'Learning from others'. This was found only in the post ROE group in both Phases 1 and 2 (Appendices 4 and 5).

**Table 6.2: Group Task - What are some ways that babies can learn?**

| Theme | Definition | Sub-theme | Definition | Example |
|---|---|---|---|---|
| **1. Learning Environments** | Knowledge gained within a particular type of physical surrounding. | Formal | A learning environment with formal or semi-formal instruction | 'Nursery' 'School' |
| | | Informal* | Less formal learning environments | 'Playschool' 'Toddlers group' |
| **2. Learning from Others** | Gaining knowledge externally from people. | Listening to Others | Learning via listening to others talking, reading or singing | 'Talking to baby' 'Being read to' |
| | | General Learning | General learning via other people | 'Teach them' 'Teach to walk' |
| | | Copying Others | Learning resulting from imitation of the actions of others | 'Copying others' |
| | | Love/ROE* | Learning resulting from receiving love or attention or from the ROE Programme | 'Loving baby' 'Baby can learn through ROE' |
| **3. Educational Aids** | Knowledge facilitated through external sources or objects. | Numbers/Alphabet/General | Learning via use of various tools and aids including numbers and alphabet | 'Alphabet blocks' 'Letter books' |
| | | Books/Toys/Games/Play | Learning resulting from reading books, playing games or playing with toys | 'Toys' 'Reading books' |
| | | TV/Radio | Learning through various external sources of media and communication | 'Watching TV' 'CBBC' |
| | | Using Supports | Learning via use of additional physical aids | 'Baby walker' 'Bouncer' |
| **4. Physical/Sensory/Experiential** | Learning facilitated by the physical environment, sensory stimuli or personal experience. | Generic | General learning via the senses, through physical exploration or experience | 'To walk' 'Crawl' |
| | | Mistakes/Accidents* | Specifically related to learning following mistakes or accidents | 'Learn from own mistakes' 'If burned baby will learn' |

*Question 3 (KoID): What are some ways to keep babies safe?*

Thematic analysis of responses to the last of the three questions "*What are some ways to keep babies safe?*" produced three main themes with four sub-themes in total; one main theme had no sub-themes. Themes were similar throughout both Phases, with any differences noted (Appendices 6 and 7).

**Table 6.3: Group Task - What are some ways to keep babies safe?**

| Theme | Definition | Sub-theme | Definition | Example |
|---|---|---|---|---|
| **1. Environments** | The baby's physical surroundings including places and objects. | Safe Environments | Locations which may have guarded against physical or emotional harm or distress. | 'High chair' 'Put them in cot' |
| | | Dangerous Environments/Objects/Situations | Locations, objects or circumstances which the baby may have been put in, left in, located near, given, allowed to be exposed to or come into contact with. | 'Keep away from fire' 'Don't leave sharp objects about' |
| **2. Caring Behaviour** | Positive, compassionate or empathic actions of others towards the baby. | Physical | Actions or behaviours undertaken by the caregiver which specifically provided physical comfort or care. | 'Hold baby's head' 'Keep warm' |
| | | Using/Taking Protective Measures | Actions, appliances, tools, objects or behaviours which were enacted or used to protect, preemptively care for or guard against dangerious or potentially harmful circumstances or experiences for the baby. | 'Baby Gate' 'Car seat' 'Stair gate' |
| **3. Responsible** | Behaviours undertaken to | - | - | 'Keep away from dogs' |

| Theme | Definition | Sub-theme | Definition | Example |
|---|---|---|---|---|
| | protect the baby (usually by the main caregivers) and provide the baby with a positive, nurturing, caring environment. This also included choices or decisions taken by the caregivers which kept the welfare of the baby paramount. | | | 'Watch baby' 'Keep an eye on baby' |

## Recognition of Infant Facial Expression of Emotions

*Question 1 (I-FEEL): What are some reasons that this baby cries?*

Thematic analysis of responses to the first question "*What are some reasons that this baby cries?*" produced four main themes with nine sub-themes in total and one main theme had no sub-themes.  Themes were similar throughout both Phases and ROE and control groups, with any differences noted (Appendices 8 and 9).

**Table 6.4: Group Task - What are some reasons that this baby cries?**

| Theme | Definition | Sub-theme | Definition | Example |
|---|---|---|---|---|
| **1. Physical/Physiological** | Any sensory or physiological bodily experience or pain or discomfort caused by a tangible object. | - | - | 'Hungry' 'Hurt itself' 'Tired' 'Nappy changes' |
| **2. Emotional** | Any mental state or feeling. | Generic (Emotional) | Any general negative emotional state or feeling. | 'Bored' 'Annoyed' |
| | | Lonely/Abandoned/Maltreatment | The baby experiencing feelings of loneliness, abandonment or maltreatment. | 'Left alone' 'Been abandoned' |
| | | Absent Parent | Distress of the baby caused by absence of one or both parents including wanting or needing parent. | 'Mum is away' 'Wants Mum or Dad' |
| | | Fear | Emotional distress, anxiety, | 'Scared' |

| Theme | Definition | Sub-theme | Definition | Example |
|---|---|---|---|---|
| | | | or fear generated from internal or external stimuli. | 'Frightened' 'Had a bad dream' |
| **3. Wants/Needs** | A want or need which prevented the child from achieving a goal. | Physical (Wants/Needs) | Encompassed any want or need relating to a physically tangible object. | 'Wants food' 'Needs nappy changes' 'Something taken off of baby' |
| | | Emotional (Wants/Needs) | A want or need relating to a mental state or feeling. | 'Wants attention' |
| | | Generic (Wants/Needs) | General want or need which was not exclusively physical or emotional. | 'Wanting something' 'Not getting own way' |
| **4. Aversion** | Sensory aversion caused by unpleasant stimuli. | Audible Disturbance | Sensory aversion caused by noise. | 'Being shouted at' 'Loud music' |
| | | Dislikes* | A feeling of dislike generated by unpleasant stimuli. | 'Something it doesn't like' 'Doesn't like camera' |

*Question 2 (I-FEEL): What things can you do to help a baby who is crying?*

Thematic analysis of responses to the second question "*How can you help a baby that is crying?*" produced three main themes with 13 sub-themes in total. Themes were similar throughout both Phases and ROE and control groups with the exception of one additional sub-theme 'Passively Negative Behaviours' within Theme 3: 'Personal Behaviours' which was identified in Phase2, but not in Phase 1 (Appendices 10 and 11).

**Table 6.5: Group Task – What things can you do to help a baby who is crying?**

| Theme | Definition | Sub-theme | Definition | Example |
|---|---|---|---|---|
| **1. Care** | Providing care for the baby in terms of general health, welfare, needs and protection from danger. | Medical | Any action incorporating providing aid to a medical issue. | 'Give medicine' 'Taking to hospital' |
| | | Care Giver | Helpful actions performed by a caregiver. | 'Put it to sleep' 'Change nappy' |
| | | Safety* | Actions which would help keep the baby safe from danger. | 'Put on seat belt' |
| | | Give Comforter | Giving the baby an item which would help make them more comfortable. | 'Give dummy' 'Teething ring' |
| | | Feeding | Giving the baby food or drink. | 'Give bottle' 'Feed it' |
| **2. Distraction** | Using various diversion techniques as a means of stopping the baby crying. | Play | Someone performing a behaviour which would distract the baby by way of play. | 'Play with baby' 'Sing lullaby' |
| | | Objects | Someone providing an object for the baby by way of distraction. | 'Give toy' 'Put TV on' |
| | | Outdoors | Distracting the baby by taking the baby outdoors. | 'Take a walk' 'Push in pram' |
| **3. Personal Behaviours** | Either the baby or another person performing an action (positive or negative) which may have helped the baby stop crying. | Stop Negative Behaviours* | Someone stopping a behaviour which was making the baby cry. | 'Don't shout' 'Don't be selfish' |
| | | Do Positive Behaviours* | Someone performing an action which would stop the baby crying. | 'Cheer it up' 'Tell them it is okay' |
| | | Negative Behaviours* | Involved someone saying a negative statement to the baby or performing a physically/passively negative behaviour. | 'Tell baby to be quiet' 'Tape mouth shut' 'Go back for it if you left it' 'Just leaving it until it stops' |

# Comparison

For the purpose of this study we also analysed the responses given which were common across ROE and control and those which differed at both pre and post-intervention and between Phases. This allowed us to observe the impact of the ROE programme on knowledge of infant development and recognition of emotions. The comparison is split by individual question.

**Table 7.1: Group Task Comparison of Phase 1 ROE and Control Groups for the question "What are some ways that babies can get hurt?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| COMMON | ROE | CONTROL | COMMON | ROE | CONTROL |
| **Theme 1: Medical Issue** | | | | | |
| - | Bones not formed properly in head, germs/dirty shoes, new teeth growing in and soft head – hurt if knocks it – fall backwards | Asthma attack, born with cancer, chicken pox, insect sting and split head open | - | Asthma, hit head – soft head and soft spot on head | Allergic to something and sun burn |
| **Theme 2: Accidental Harm** | | | | | |
| **Harm Caused By Self** | | | | | |
| Choking, banging head, falling (particularly off something), bumping into something, walking or crawling into something, jamming fingers, biting something, tripping over and getting stuck. | Carpet burns, escape from gate, hurt themselves, scratch themselves and when learning to walk | Climbing on window sill, cut finger, dancing and not looking where going | Banging head, choking, falling (particularly down stairs or off something), jamming fingers, tripping over or slipping and knocking something over causing harm | Eating paper, if they try to stand and fall over, jag hand on grass, lost balance while bending down, put keys in mouth, roll over and bang into something and stood on something | Carrying on, cutting themselves, hit self with toy, jump off bunk beds and walk into radiator |
| **Harm By Another/By Object** | | | | | |
| Dropping baby, falling over baby, not holding them carefully, touching their soft head, something falling on the baby and swallowing something | Falling when holding the baby, an incident when pregnant, small things and toys, adults can stand on their fingers, fall out the buggy if not strapped in and hurt baby's neck | Being hit by a car or in a crash, someone falling on top of them, locked in by accident, punched by accident and spilling hot tea on the baby | Not holding them (or their head) carefully and being hit by a ball | Laying a baby on tummy to go to sleep, escape out gate, hit by car, something falls on them and hurt on swings | Being dropped, car crash, eaten by lion in woods, leave something on floor, being too rough with them, standing on their fingers, putting their hand in the washing machine and a young person dropping them |
| **Dangerous Object/Substance/Environment** | | | | | |
| Being burnt (fire, hot water), being cut (glass, sharp objects, scissors), | Balls hitting their head, chairs/bunk beds/knives/pots, cookers | Eating something dangerous, taking medicine, piercing their | Being burnt (tea, radiator, fire, and bath), choking on something dangerous, | Consuming dangerous liquids (alcohol, bleach), touching the cooker, | Candles falling on baby, fingers jammed somewhere dangerous, |

| | | | | | |
|---|---|---|---|---|---|
| electricity, inappropriate food, touching dangerous objects (nails, fireworks, bricks), consuming dangerous liquids, on the road, parent smoking, around alcohol and hurting themselves with toys | and ovens, removing things from drawers and swimming pools | ears and being too close to the stairs | electricity (particularly putting fingers in sockets), being cut (sharp objects, knives, nails, glass) and taking medicine | drowning, parent smoking, strangled in blind cord, suffocated in plastic bag, dangerous chemicals, fall out open window and loose parts of toys | going on the main road, a mirror falling on baby and getting trapped under a quilt |
| **Theme 3: Purposeful Harm** | | | | | |
| **Neglected** | | | | | |
| Being left alone | Not being strapped in car | Bath on own, not being supervised, not getting fed and no car seat | Leaving baby alone or the baby not being supervised and leaving a door open and the baby walks out | No baby gate on stairs, baby not being strapped into car seat or baby chair properly, falling in bath if baby left alone and baby being dehydrated | Leaving baby in the room with dangerous things and wrong kind of care |
| **Attacked/Abused** | | | | | |
| Hitting baby, shaking baby and being attacked by an animal (cat, dog) | Pushing the baby | Suffocating or smothering the baby, running into them and if the mum or dad treats it badly | Attacked by animal (dog, pets) and being shaken | Hitting and punching baby, parent drinking (particularly mum when pregnant) and smoking next to a baby | Pulling and pushing baby, pulling their arm out of its socket, throwing baby up and not catching it, parents abusing them and being suffocated |
| **Theme 4: Sensory/Emotional** | | | | | |
| Loud noises | - | Feels too hot, don't get own way and fall out with one another | - | - | - |
| ***Relevant but Uncodeable*** | | | | | |
| - | Fell off your knee, careful when lifting/feeding baby, not breathe, don't leave bath on own, water, on the head, don't hit a baby or touch its head, don't let baby run away, make sure mum is always with baby, spinning, telly, cars and bins | Outside, back garden and swimming pool | - | Walking with no shoes, go underwater, baby copying others, cutlery drawer, stairs, cars, cat flap, blinds and coat hanger | Pond and blinds |
| ***Uncodeable*** | | | | | |
| - | Off tables, falling well someone standing up, | Sitting on their dog, into toilet and played with | - | Drop their bottle in bath, and smell smoke | Bite on a balloon |

| | | | | | |
|---|---|---|---|---|---|
| | sailing, sakis and if you don't change its nappy | | | | |

**Table 7.2: Group Task Comparison of Phase 2 ROE and Control Groups for the question "What are some ways that babies can get hurt?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| COMMON | ROE | CONTROL | COMMON | ROE | CONTROL |
| Theme 1: Medical Issue | | | | | |
| Teething and breaking something | Might have operation | Bit of nail fallen off, wasp sting, nose bleed, split head open, injection and couldn't breathe | - | Brain damage, teething and teeth out at the dentist | Breaking a limb, sun burn and splitting their head open |
| Theme 2: Accidental Harm | | | | | |
| Harm Caused By Self | | | | | |
| Banging head, choking, climbing, falling (off something and downstairs), slipping or tripping over, bumping/walking into something, running/walking and falling, jumping off something, hurt themselves (bite tongue, hitting itself) and hurting (jamming) fingers | Could get into cupboards | Burped too hard, if there is a flood fall down toilet, on way to school, soap in eyes, swinging on crib and crawled out window | Falling (off something and down stairs), banging head, choking, jamming fingers in door, slipping or tripping over, bumping into something and jumping off something | Hurting themselves on furniture, caught in blind cord, head first on hard floor, hurt themselves on stones, hurt when crawling or running, jammed into door when rolling over and leg down toilet | Car seat tipped over, climbed out car window, copy again and hurt themselves, drop something on their head, suffocate under covers, head through the stair gate, learning how to walk and trying to run and pulling a chair on top of them |
| Harm By Another/By Object | | | | | |
| Being hit by a car or in a crash, dropping baby, not handling baby carefully and swallowing or eating something they shouldn't | Someone bumping into baby, fall when pregnant, small objects and someone feeding baby who doesn't know what to do | Brushing hair too hard, hurt on building blocks, pram rolling away, pushed too hard on swing, ripped cot, something falling on baby, squashing baby, head squeezed in forceps delivery and a table breaking with the baby on it | Dropping baby, being hit by an object, swallowing something they shouldn't, hit by car/being run over, harm from toys and not handling baby carefully | Sneaking out when cat/dog leave house, laying a baby on its tummy and hurt on hailstones | Another baby hits them, bag over their head, being hit by opening door, car crash, crawl into household appliance, crayon up their nose, dog trips them up, head through picture, hurt on coat hangers, tripping over baby, brake not on pram and it rolls and seatbelt around their neck |
| Dangerous Object/Substance/Environment | | | | | |
| Being burnt (bath water, kitchen appliances and | Consuming dangerous liquids, taking medicine | Shot by BB gun and splinters | Being burnt (hot liquid, fire & kitchen appliance), | Baby fall out of window and swallow something | Being on train tracks, dangerous bike, falling out |

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| | | | | | |
|---|---|---|---|---|---|
| fire), being cut (sharp objects, scissors, knives and glass), electricity, being out on a road, Touching dangerous objects and smoking around the baby | and mother smoking/drinking when pregnant | | being cut (knives, glass & scissors), taking medicine, dangerous liquids, electricity, drowning, being out on the road and harmful objects (nail and sledgehammer) | small | of a car, hit head with sledgehammer, put bugs in their mouth and suffocate |
| **Theme 3: Purposeful Harm** | | | | | |
| **Neglected** | | | | | |
| - | Not being strapped in car | No milk, no food and not changing nappy | Baby being left alone or unsupervised and baby being able to get outside alone | - | No seatbelt, no harness in pram and runaway pram |
| **Attacked/Abused** | | | | | |
| Attacked by animal (cat/dog), someone kicking or hitting the baby, other children hitting the baby and the baby being squeezed or squished | - | Baby being pushed, a football being kicked at baby and standing on baby's fingers | Hitting baby and shaking a baby | Head smashed against wall, knife through them and let them go when holding | Attacked by animals (dog, cat and fox), pushing baby, throwing something dangerous at baby, squeezing baby's head, throw baby about and baby gets blown up |
| **Theme 4: Sensory/Emotional** | | | | | |
| - | Loud noises | Someone shouted at/near baby, saw people arguing, being scared, being annoyed, eyes too close to TV and balloon burst (fright) | - | - | Get a fright and fall and shouted at |
| ***Relevant but Uncodeable*** | | | | | |
| | Be careful who you leave baby with, animals | Concrete, metal | | Eating fat foods, drink, pull table cloth | Climbing, climbs up, in kitchen, into an elevator, climbs down/up stairs |
| ***Uncodeable*** | | | | | |
| | Don't let baby out on balcony, don't leave window open, choking burns, drawers, cupboards | Not enough sleep, for no reason | | Hurt on cage lift, when doing something new | Face in their dinner, bottle, child locks/car – fall |

**Table 7.3: Group Task Comparison of Phase 1 ROE and Control Groups for the question "What are some ways that babies can learn?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| COMMON | ROE | CONTROL | COMMON | ROE | CONTROL |
| **Theme 1: Learning Environments** | | | | | |
| **Formal** | | | | | |
| Nursery | - | - | Nursery | Tutor | School |
| **Informal** | | | | | |
| Mothers and Toddlers group | Learning school (before Nursery) | Playgroup and cubs | Mother and Toddler group | Baby classes, learning to swim, playschools and crèche | - |
| **Theme 2: Learning from Others** | | | | | |
| **Listening To Others** | | | | | |
| Learn to talk by listening to others talking and talking to baby/ saying – learn words | Remember mum's voice and be careful what you say | Reading to baby and count to 10 with baby | Talk to baby and read books | Copy words, count while going downstairs, listening and watching others, listening to talking, repeating words, sing nursery rhymes, teach how to listen and teach them to talk by telling them your name | How to speak and mum teaches talk |
| **General Learning** | | | | | |
| Help to walk – hold baby's hand, teaching words, can learn from older people (mum, dad, siblings), to crawl | Help to say words, can learn bad things from others, teach not to do something that hurts them, teach numbers, sign language, to balance and to eat and teach them with a chalk board | Encouraging them, feed baby, give a bath, good parental example, helping to play nicely, making sure they don't hit or scratch, play with baby, saying no to baby, teach a French song, telling baby not to go near dangerous things, watching people | Help baby to walk – support them, learn from watching others, learn from parents, family, siblings, other people, pointing out things to baby (showing object and naming it) | Teach another language (before they are too old), hold them on bike, mimes, mum repeats, mum teaches how to talk, hold baby when learning to swim, sign language, teach to crawl, stand up, talk and when drawing with crayons teach the colours, get them to spell words | Demonstrating to baby, help learn alphabet, help not to fall down the stairs, help write their name, make baby help you, play with them, potty training, talk to baby, teach them to feed themselves, teach them yourself, train them |
| **Copying Others** | | | | | |
| Copy others | - | - | Copy from others, count and get baby to copy you | Do actions and baby will copy, see an adult and try and show them new things so they copy you | Copy movement of adult's mouth |
| **Love/ ROE Programme** | | | | | |
| - | - | - | - | If you love them it will make their brain grow, loving baby, and love | - |

| Theme 3: Educational Aids | | | | | |
|---|---|---|---|---|---|
| **Number Blocks/Alphabet Aids/ General** | | | | | |
| Alphabet toys (letter blocks) | - | Building blocks, learning alphabet, and picture cards | Shapes | Abacus, letter blocks, and teaching numbers and alphabet look at danger sign, signs | Blocks (building) |
| **Books/Toys/Games/Play** | | | | | |
| Books (reading), playing games, playing | Peek a boo, jigsaws, rattle – different toys – learn sounds | Baby laptop/computer, learning toys, looking at pictures, nursery rhymes, Playstation, push toy and toys to help learn/teach | Books | Draw pictures in black and white and tell them what you mean, nursery rhymes and toys that make sounds | Educational puppets, toys, jigsaw, Lego, playing baby hide and seek, playing with baby, v-tech toys |
| **TV/Radio** | | | | | |
| CBeebies and watching TV shows | Interactive DVD | Radio | TV shows (kids programmes: CBeebies, Teletubbies, cartoons) | - | Advertisements and bill boards |
| **Using Supports** | | | | | |
| Baby walker | Baby gate – knows not allowed on stairs and walking pen to walk | Hold onto something when trying to stand up | Baby walker | - | Baby bouncer |
| **Theme 4: Physical/Sensory/Experiential** | | | | | |
| **Generic (Physical/Sensory/Experiential** | | | | | |
| Hold or pick up bottle/food/toys, learn to roll over/sit/stand/ learn to kick a ball (play football) | Clap hands to get attention, learn to eat/chew (cut up food), move towards noises, smell mum, teething ring, learn to read, learn to swim, learn colours - to write numbers, and through senses | Chew by teething, climbing on couch, crying – learn to talk, drawing, go outside, how to listen, counting/numbers, to walk, eat dinner properly, how to write, how to sit down, how to dance, how to climb on couch, how to talk, how to speak | Learn to sleep, ride bike/scooter and learn to lift things/hold bottle and learn through senses (smell, feeling things) | Doing stuff, how to write, let baby draw with both hands to see if they are left or right handed, not near a cooker, to understand words | Feed themselves, from food, from themselves, from violence, how to count, learn to dress themselves, practise, counting objects, learn to drive when older, learning how to eat |
| **Mistakes/Accidents** | | | | | |
| Learn from mistakes – when learning to crawl/walk – fall over | - | - | - | - | Learning from hurting themselves |
| *Uncodeable* | | | | | |
| - | Therapist | Potty, buying safe things for baby, no sharp things, baby milk, to not cry, feed | - | Toilet, putting in bath | Toilet, jotters, use its feet to drink, to hold the door, to close the door, give |

| with spoon, open doors | | | | | them Actimel |
|---|---|---|---|---|---|

**Table 7.4: Group Task Comparison of Phase 2 ROE and Control Groups for the question "What are some ways that babies can learn?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| COMMON | ROE | CONTROL | COMMON | ROE | CONTROL |
| **Theme 1: Learning Environments** | | | | | |
| **Formal** | | | | | |
| Nursery | - | School, swimming lessons | Nursery | School | - |
| **Informal** | | | | | |
| - | Toddler group | Play school | - | - | Toddler/ nursery, fitness class, toddlers |
| **Theme 2: Learning from Others** | | | | | |
| **Listening To Others** | | | | | |
| Speaking and listening to the baby | Reading to baby, listening to people talking, sing to them | Read them the alphabet, speaking, sound effects | Talking to baby and baby listening to people speaking | Say lost of words around them and the baby will pick up the words | Read a book to them |
| **General Learning** | | | | | |
| Helping baby to learn to walk, learning from/watching others, sign language: teaching them | Keep safe in bath, learn good behaviours from you, potty train them, teach alphabet, teach by own behaviour, teach how to hold bottle, teach sums and to count, teach to crawl, teach to go outside, teach to jump, teach to listen, teach to play with toys and computer when older, teach to swim,  teach to write | Being encouraged, being looked after, Mum and dad helping baby/ telling them what to do, sharing with baby, teach them to do the toilet, teach not to hit, baby trying new things, spelling, how to speak | Learning from and watching others (particularly brothers and sisters), someone helping baby to walk or crawl, hold babies hand when trying to walk, others showing them what to do, learn to talk, teach to swim | By helping mum, involve baby in what you are doing. See someone walking, show them to draw, show them to put things in a bag, sign language, talking, teach to get used to eating big foods, teach to play, teach what is bad, teaching themselves, teaching to close doors, teach them to close doors/open things | Help them put their shoes on, learn to clean, parent talking to them about surroundings, learn to write, learn/teach maths, make them laugh, mum telling them to get potty trained, not to hit by telling off, teach danger signs, teach games together, teach how to be nice to each other, teach them to sit on a chair, watching |
| **Copying Others** | | | | | |
| Copying other people | Be sensible baby is copying you | - | Copying other people | - | - |
| **Love/ ROE Programme** | | | | | |
| - | - | - | - | Baby can learn through ROE | - |
| **Theme 3: Educational Aids** | | | | | |

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| Number Blocks/Alphabet Aids/ General | | | | | |
|---|---|---|---|---|---|
| Alphabet and alphabet blocks/ magnets, building blocks, numbers, word cards | Animal sounds, talking books, match shapes and blocks, number tens | ABC blocks, number blocks, picture cards, play foam letters, shapes, signs, toys to learn letters | ABC blocks, magnetic letters, shapes | ABC learn it, flash cards, number books, put numbers and ABC on wall, roll number balls, shape sorters, jigsaws | 123 number blocks, building blocks, number blocks, number toys, signs and pictures |
| **Books/Toys/Games/Play** | | | | | |
| Books/reading, learning games/toys, playing | Computer-alphabet music number games, Google dictionary, nursery rhyme books, play-doh, toys can teach them colours | Balls, building Lego, looking at pictures, play animals, play park, toy bricks | Books, play with baby, toys | Books, different coloured balls, drawing, educational games, Google dictionary-put them in chair to watch, leap frog, learning through play/toys, nursery rhymes, picture books, pull out books | Buy them toys, dance game on computer, give chalkboard/learn to write, number puzzles, playing/exercise, put music on, reading, writing colours, how to play and how to read |
| **TV/Radio** | | | | | |
| Watching TV shows and baby programmes | - | DVD | Watch TV, educational programmes | Radio | CBBC, Telletubbies, Peppa pig, video, video with letter counting |
| **Using Supports** | | | | | |
| Baby walker | Baby Chair | Baby bouncer | Walker | - | Bike with stabilisers, bouncy chair |
| **Theme 4: Physical/Sensory/Experiential** | | | | | |
| **Generic (Physical/Sensory/Experiential)** | | | | | |
| Eating, learn to walk/crawl | Clap, climb ladder, counting with fingers, exploring, how to climb/jump, how to write, feed themselves, juggle, look at things | Crawling race, balance on things, by touching, chew toy for teething, cycling, doing things for itself, drawing, gun toy, hearing noises/making noises, laughing, learn by playing/ bouncing, picking things up, practicing, repeating, sleeping, standing up, talking, not to swear | Learning to clap, walking, counting | Use 5 senses, football, sounds, how to back flip, sports, take to new place to recognise where it is | Crawl, eating, getting dressed, learn on the train, learn to chew dummy, learn to sit in bath, making funny noises, talking, to eat, not to run away |
| **Mistakes/Accidents** | | | | | |
| - | - | If they hurt themselves they won't do it again | - | If burned baby will learn | Learn not to go near something which already hurt them |

| | | | | | |
|---|---|---|---|---|---|
| | | | *Uncodeable* | | |
| - | Cards, give them a dummy, put in buggy, dress | Name, teething, change their nappy, toilet, big bed, changing nappy | - | Eat solid foods for mums, strap in when eating, be a ninja, writing them on board | Put in box and stop screaming |

**Table 7.5: Group Task Comparison of Phase 1 ROE and Control Groups for the question "What are some ways to keep babies safe?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| COMMON | ROE | CONTROL | COMMON | ROE | CONTROL |
| **Theme 1: Environments** | | | | | |
| **Safe Environments** | | | | | |
| Baby seat/chair, keep in cot, high chair, buggy/pram, and playpen | Being in a safe environment, keep babies in your seat, keep in hands (cradle), nursery and sturdy pram. | Keep inside/in house and Moses basket. | Cot, pram/buggy and high chair/baby chair | Play on floor, play pen and put baby somewhere safe where you can check on them | Baby pouch and hold their hands when walking |
| **Dangerous Environments/Objects/Situations** | | | | | |
| Keep away from hot/electrical objects: (fryers, oven, toaster, iron, light bulbs, fire, lighters, cigarettes, candles, hot drinks), keep away from: sharp objects, liquids/chemicals, heavy objects and make sure dangerous things are out of reach | Make sure there are no small objects about that baby could choke on (beads, jewellery, stones), make sure medicine/drugs are out of reach, keep away from: oil, the road, dogs, plastic bags, matches, make sure their bath isn't too warm, don't leave glass lying about, don't let outside on own, don't sit on hard surfaces, keep out of kitchen if on own, keep baby out of the sun, make sure that cables aren't hanging down, nothing around that baby is allergic to and make sure pot handles are turned in | Keep away from: stairs, gas, sea at the beach and cutlery | Keep away from hot/electrical objects (dishwasher, fire, hot water, washing machine, cookers, plugs/sockets), don't leave in kitchen/make sure doors are closed, keep away from sharp objects (small broken objects, broken glass, knifes, scissors) and keep away from cleaning products (bleach, washing products) | Away from deodorant, keep cables away, don't let baby on bed, don't put animals in cot, don't put on bunker, keep away from snakes and keep away from bath | Don't leave toys on the floor, don't let baby go upstairs, don't let go outside/in car (on own), don't let play with matches, face pot handles away, keep away from: choking hazards, cutlery, fireworks, medicine, road, plastic bags, stairs and keep tablets in high cabinets |
| **Theme 2: Caring Behaviour** | | | | | |
| **Physical** | | | | | |
| Keep baby warm and put baby to sleep | Don't drop baby, hold baby properly, keep going to doctors, keep safe in bath, keep them out of the rain, lift them, protect | Cradle/hold baby, hold hand, look after them/watch out for them and protect them | Hold baby's hand (when walking), hold/support baby properly, and make sure they have the right food for their age | Don't shake a baby, protect baby's head, put to sleep on back and wear nappy | Carry baby, feeding them every 10 minutes, give them snuggie to take to bed, hold baby, give medicine if unwell, put to |

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|---|---|---|---|---|---|
| | head, put in bed carefully and wind baby | | | | sleep, vaccinations, visit doctor and make sure the baby is not too warm |
| **Using/Taking Protective Measures** | | | | | |
| Baby bouncer/walker, baby carrier/car seat, baby (safety) gate/stair gate, baby reins/harness, car seat, close doors/gates, plug socket covers, don't let near jaggy/sharp objects, door locks/stopper in kitchen cupboards and seatbelt when in car | Baby intercom, corner covers (for table edges etc), have cushions around baby, high sides on crib, medicine cupboard up high and sit with baby on couch | Turn handles on pots inwards, keep baby away from road, life jacket/floatation/water wings, no climbing, shopping trolley, soft things around, strapped in, watch out for small toy, wearing bright clothes, body guard and you go outside with baby | Baby/stair gate, car seat/seatbelt, baby monitor, baby walker, bouncy chair, strap into pram/highchair, close doors/gates/windows, fireguard, fence in garden, plug/socket covers and baby reins | Bed guard so baby can not fall out, child proof caps on medicine/keep lids on medicine, cover over the pram so cats don't get in, cover sharp objects, don't leave wires or skipping ropes on the floor, elastic bands on cupboard doors, fix broken items straight away, make sure bottle not too hot, make sure floor dry after mopping, make sure no beads on floor, nothing on floor that baby could stand on, put bad stuff up high, put cards out of reach, put cleaning products up high, put lids on pens, shut dog house and sweep floor | Bubble wrap, cabinet locks, child locks, keep hot things away, keep baby under blanket, keep things in cupboards, make baby not jump off anything, stabilisers on bike and strap in high chair |
| **Theme 3: Responsible** | | | | | |
| Don't leave baby alone/keep an eye on baby and make sure baby is with a responsible carer/don't leave with someone you don't know | Age appropriate toys, make sure older siblings tidy up after themselves, carry baby on stairs, don't feed solid food too early, don't let baby get too hungry, having a secure parent, hold hand in shop, if you have an animal flap make sure it is secure, safe from animals/keep away from dogs and keep hold of pram | Carry baby everywhere, don't leave baby in car or outside alone, don't let baby hurt themselves, don't let baby run away and nanny | Make sure an adult is nearby/don't leave baby on own, keep pets away and make sure baby doesn't go on road – lift when near road | Don't drink, don't smoke, don't leave baby in dangerous places, supervise when in bath, don't leave hot things near baby, don't leave on couch/bed – could fall off, don't let baby hold heavy things, don't let go in bathroom, hold hand when learning to walk, and make sure they don't have anything in their hands that they shouldn't and secure them | Baby sitter, don't let baby fed themselves, keep cot beside bed, let sleep with parents for the first few months, make sure an adult is supervising cot when baby is sleeping and tell parent you are playing with baby |

| | | *Uncodeable* | | | |
|---|---|---|---|---|---|
| - | Have a little door | Put baby in pool | - | Stool for baby to stand on | Put it in tree |

**Table 7.6: Group Task Comparison of Phase 2 ROE and Control Groups for the question "What are some ways to keep babies safe?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| COMMON | ROE | CONTROL | COMMON | ROE | CONTROL |
| Theme 1: Environments | | | | | |
| Theme 1: Environments | | | | | |
| Safe Environments | | | | | |
| Playpen (play mat/area), keep in: cot, buggy/pram and high chair. | - | Keep in the house, keep in mum's room, staying inside, take to nursery/toddler group and home | Buggy/pram, keep in cot, high chair and playpen | Put baby on lap and beds | Keep them in a safe room and keep in house |
| Dangerous Environments/Objects/Situations | | | | | |
| Away from hot/electrical objects: cooker/oven, fan, hot water, fire, kettle, iron, lighters, candles, lamps, heater, sockets, bonfires, keep away from fireworks, away from sharp objects, glass, pins/needles, knives, tools, nails, scissors, picture frames – if they smash, keep away from/don't leave with animals, keep away from stairs and keep away from small objects – can choke | All cutlery away, bath not too hot, don't forget baby if house on fire, don't leave in car, don't let baby run – can fall, don't let out of house, keep away from swimming pool/deep water/bath, keep bleach (and other liquids) locked away and stop from jamming fingers in doors/drawers | Don't chew bad/hard things, don't do crazy things near them, don't let lick dog, don't let near food, don't put on broken table, don't spill food, guard dog, keep dangerous things away, keep door closed, keep matches away, keep out of kitchen, medicine in high cupboard, no metal on ground and not in kitchen when cooking | Don't leave dangerous/hazardous objects lying around, knives, pins, sharp objects, broken glass, kettle, BB gun, bad chemicals/dangerous liquids, nails, small objects, cooker, medicine, scissors, breakables, keep pens/pencils away, keep animals away, keep away from fires and make sure bath water isn't too hot | Don't change nappy on table (roll off), don't leave baby on high surfaces, don't leave in high chair alone, don't leave ornaments out, don't let go downstairs themselves, jam fingers, keep away from doors, keep away from radiator, keep hard toys away, keep metals away, keep money away and keep Nerf gun away | Don't be sick, don't chew wires, don't leave cat flap open, don't leave outside shop in car, don't let into a deep bath – will drown, don't let them run away, don't let them swim in toilet, fall out of car seat, insects when playing outside, keep bathroom door locked, make sure baby doesn't go into kitchen, make sure baby doesn't touch boiling water, make sure milk is not too hot and no wires to trip over |
| Theme 2: Caring Behaviour | | | | | |
| Physical | | | | | |
| - | Don't hold baby too tight, keep baby safe, keep baby warm and make sure baby is out of the way | Baby should have hat on when its cold, carry/hold/lift baby, don't put baby in front seat of car, give toys, hold baby's head, keep baby healthy, look after baby, mittens, protect baby and put to sleep | Feed correct (healthy) food | Carry, don't lay baby on its stomach, hold on knee and sunscreen | Catch if falling, clean nappy, don't feed too much, don't keep out too long, don't starve, dress correctly/wear warm clothes/wrap up when cold outside, give milk, keep baby warm, make sure they have sleep, |

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|---|---|---|---|---|---|
| | | | | | need food, parent to protect them, rock/cradle baby and save them |
| **Using/Taking Protective Measures** | | | | | |
| Baby/stair gate, baby harness/reins, baby monitor, car seat/seatbelt, close doors/gates, fireguard and plug/socket covers | Baby bouncer/walker, brakes on pram, corner protectors, cupboard locks, don't leave in trolley at shop, don't run with buggy, keep inside, no flies, water wings in pool and windows closed | Baby carrier (papoose), baby scissors, buggy, help baby down stairs, keep hold of pram, keep baby low down, net for trampoline, safety clothing, shut blinds and take out in car | Baby bouncer/walker, baby/stair gate, car seat, baby harness/reins, lock doors, keep cot sides up, keep doors closed, plug/socket covers, seatbelt in car and baby pouch (papoose) | Baby carrier, baby seat to watch TV, baby suits, child lock on car, dog gate for door, door locks, doughnut cushion, fireguard, make a list of things to do to keep baby safe, protect, sharp corner coverings, tricycle walker and walking pen | Baby monitor, baby safety locks, brake on pram, buggy, chair lift, don't leave chewing gum, give bib, keep indoors, lock car windows, mittens, prop baby up so don't fall downstairs, put helmet on their head, put sun hat on, put sunscreen on and turn electricity off |
| **Theme 3: Responsible** | | | | | |
| Always keep an eye on baby, don't leave baby alone, keep baby with you and hold baby's hand | Away from computer, baby not in swimming pool on own, don't forget baby, don't leave baby in bath on its own, don't let baby touch police dogs, don't smoke around baby, keep baby somewhere safe and make sure road clear when crossing | Baby sitter/have someone look after baby, don't shout at baby, going to Gran's, play with baby, stand beside baby and treat with respect | Keep an eye on baby, babysitter – make sure someone is always looking after baby, don't leave baby alone, keep baby with you, no smoking around baby and don't leave alone in bath | Supervise when in playpen/high chair and look after baby | Be careful of baby around day, hold hand, keep close to baby while out and about, learning a safety manual, listen out for baby, no dog until older and same bedroom |
| *Uncodeable* | | | | | |
| - | Kill the bad guys | Keep in box, spicy food | - | Don't be a ninja, don't shoot with tranquiliser gun | Sellotape in box, put them in a cage |

**Table 7.7: Group Task Comparison of Phase 1 ROE and Control Groups for the question "What are some reasons that this baby cries?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| COMMON | ROE | CONTROL | COMMON | ROE | CONTROL |
| **Theme 1: Physical/Physiological** | | | | | |
| Babies getting hurt, falling (especially falling down stairs), being hungry, thirsty or tired, teething, getting burnt & things being too hot, just being born, being too hold or too cold, and been woken up | Baby gets ears pierced, born after Mum taking drugs, chokes, dog licking baby, getting jags, getting picture taken, seeing people fighting, being sick and being uncomfortable | Allergic reaction, being held for too long, Mum cutting onions, itchy tights, in rain, knocked out & crying when taking medicine | Abuse, Babies getting hurt, falling, being hungry, thirsty or tired, teething, just being born, being too hot or too cold, been woken up, being dropped, having a dirty nappy and being changed | Mum taking drugs and alcohol whilst pregnant, dog attacks, scratches or licks baby, getting picture taken (flash), being sick, shaking a baby, something in its feet, stubbed toe, sunburn, and wont go to sleep | Being held for too long, getting burn and seeing people fighting |
| **Theme 2: Emotional** | | | | | |
| **Generic (Emotional)** | | | | | |
| Annoyed or annoyed at baby | You tease it, baby doesn't know what's happening, not happy, sad | - | Being annoyed | Angry, jealous of dog and sad | If teased |
| **Lonely/Abandoned/Maltreatment** | | | | | |
| Being abandoned/ left alone, parents don't look after baby/ neglect it, no-one is talking to baby | Lonely, no-one is listening to baby, no-one to keep them company | - | Left alone, abandoned | - | Been stolen, neglected, looked in room alone, no-one taking care of them, left on holiday |
| **Absent Parent** | | | | | |
| If parents not there | Mum or Dad went to bus stop: can't see parents, misses Mum and Dad, wants Mum and Dad | If parents ran away | Wants Mum | Can't see Mum, Mum or Dad left room, being taken away from parents, misses parents, scared, doesn't want Mum to go outside | Lost Mum |
| **Fear** | | | | | |
| Frightened, scared | Bad dream, scary faces | See something scary, scary toy, thinks it's in danger | Bad dream, got a fright, scared | Afraid of the dark | - |
| **Theme 3: Wants/Needs** | | | | | |
| **Physical (Wants/Needs)** | | | | | |
| Not fed/needs fed, no dummy, lost its favourite toy or wants a toy, nappy needs changes, needs the toilet, something has | Needs sleep, needs burped, wants our of pram/high chair or wants picked up, wants fresh air, wants put bath, wants | Sees a stranger | Can't sleep or needs sleep, no dummy, nappy needs changed, wants fed/hungry, something taken off of them (toy, | Doesn't have any toys, needs a bath and doesn't want it, needs toilet, wants to play with brother or sister, wants to play | Needs a drink, woke up and wants bottle |

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|---|---|---|---|---|---|
| been taken off of them | someone to be with them | | blanket, dummy) | with toys, wants to watch TV | |
| **Emotional (Wants/Needs)** | | | | | |
| Crying to get attention or is not getting enough attention | - | - | Crying to get attention or is not getting enough attention | Needs love | - |
| **Generic (Wants/Needs)** | | | | | |
| Baby wants something | Not getting any help, needs comfort | - | Not getting what they want | Different schedule (i.e.: milk at different times), something annoying them they cant do | Doesn't want to do something |
| **Theme 4: Aversion** | | | | | |
| **Audible Disturbance** | | | | | |
| Too noisy/ loud noised such as thunder and fireworks, shouting | - | - | Loud noises, shouted at | Adult beeped horn, heard loud music | Barking dog |
| **Dislikes** | | | | | |
| - | Doesn't like food been given, doesn't like song that came on, doesn't like getting picture taken, doesn't like shadows | - | - | Doesn't like camera | Something it doesn't like |
| *Uncodeable* | | | | | |
| - | To build up its lungs, rattle, cot, trouble, no reason, bottle dummy | Park, dog parks, fed, dinosaur picture, the dark, nappy, down stairs | - | Bottle, high intensity, fed | Age one problems, somebody tell on it, no reason just wants to cry |

**Table 7.8: Group Task Comparison of Phase 2 ROE and Control Groups for the question "What are some reasons that this baby cries?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| **COMMON** | **ROE** | **CONTROL** | **COMMON** | **ROE** | **CONTROL** |
| **Theme 1: Physical/Physiological** | | | | | |
| Baby being hurt or hurt itself, got burnt, dog licked or bit baby, baby falling, having a bath or shower, the baby was hit, baby being hungry, nappy being changed, tired, teething, sick, just woken or been woken up | Bad haircut, baby was slapped, making faces at it, brother or sister hurt them, food wrong temperature, baby was just born, stuck somewhere | Bad person in the house, bitten or bitten self, broken leg, no seatbelt on in car crash, cold, baby dropped, eaten too much, illness/infection, restless, sore gums, stabbed, thirsty, tied up in skipping ropes, too hot or cold, a flash, too dark | Baby got hurt or someone hurt the baby, baby was smacked, baby burnt itself, baby is sick, not having a toy, baby fell, hungry, sick, did the toilet and needs changed, tired, thirsty | Baby got kidnapped and put in a tank, homeless, cold, just woken up, milk too hot, tooth fell out, unfamiliar environment, when stranger in the house | Bad asthma, bath water cold, bouncy chair not tight enough on door, camera flash, drowning, injections, it got Sellotaped in a box, itchy rash, just born, picking stuff out of bin, rat in house, soap in their eyes, tickled, spilled its juice, |

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| | | | | | stuck in crib, swallows air rather than milk, uncomfortable, walking |
|---|---|---|---|---|---|
| **Theme 2: Emotional** | | | | | |
| **Generic (Emotional)** | | | | | |
| Baby is annoyed, baby is being teased | Baby is bored | More attention being paid to siblings, people are arguing | - | Bad mood, it's angry, not got its own way, missing someone | Baby is bored, got a row or is in trouble |
| **Lonely/Abandoned/Maltreatment** | | | | | |
| Baby is lonely | Surrounded by people it doesn't know | Baby is not cared for, locked in a room by itself | Baby is left alone, been abandoned | Lonely, no-one is playing with baby | Locked in house, not looked after properly, parents bad to baby, baby is stolen |
| **Absent Parent** | | | | | |
| Baby can't see parents and is missing/wants them | Parents are away, Mum left and thought it was well looked after | - | Baby can't find its parents, and wants or is missing mum and dad | Mum left or is not there, baby had not had enough time with mum and dad | - |
| **Fear** | | | | | |
| Baby is scared | Bad dream | - | Having a bad dream and being scared | - | - |
| **Theme 3: Wants/Needs** | | | | | |
| **Physical (Wants/Needs)** | | | | | |
| Baby lost its dummy, needs fed is hungry or is not getting fed, needs its nappy changed, something is taken off baby (e.g. toy), baby wants something (e.g. bottle, toy, dummy etc) | Thirsty, needs surgery, sees a balloon and wants it | Changing TV programme, baby is dirty and needs a bath, dropped dummy, needs burped, someone hid bottle, wanted a cry | Lost something (e.g. dummy, blanket, toy), needs the toilet or nappy changed, needs fed, needs something to play with, wants something (e.g. toy, milk, dummy) | Food taken off of it, needs a hug, needs fresh air, needs put to sleep, doesn't want to go to bed, toy has been taken away | Didn't get toy, dropped something they can't reach, lost its balloon, needs burped |
| **Emotional (Wants/Needs)** | | | | | |
| Baby wants attention | - | - | Needs more attention | Needs love | - |
| **Generic (Wants/Needs)** | | | | | |
| Wants or needs something | Not getting its own way | - | Trying to get something/wants something it can't get, baby not getting its own way | Needs minded | - |
| **Theme 4: Aversion** | | | | | |
| **Audible Disturbance** | | | | | |
| Being shouted at, fireworks, loud noises | - | Dog barked at them, smoke alarm noise | Too much noise/ loud noise, being shouted at | - | - |

| | | Dislikes | | | |
|---|---|---|---|---|---|
| - | - | Doesn't like people eating, doesn't like food | - | - | - |
| | | Uncodeable | | | |
| - | At night, dummy, toilet | Toilet, play peek-a-boo | - | A flash, baby bottle, animals, toilet, takes teddy, someone to play with | Don't leave dummy, don't scare, dangerous, break into house, bottle, has a scarf |

**Table 7.9: Group Task Comparison of Phase 1 ROE and Control Groups for the question "What things can you do to help a baby who is crying?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| **COMMON** | **ROE** | **CONTROL** | **COMMON** | **ROE** | **CONTROL** |
| **Theme 1: Care** | | | | | |
| **Medical** | | | | | |
| Giving medicine and bandage/plaster | If the baby is unwell then give it a bath | Take to doctor | Giving medicine | Give plaster, take to doctors, give 1$^{st}$ aid and go to the chemist | - |
| **Care-Giver** | | | | | |
| Bouncing baby on your knee, burping baby, lifting baby up, looking after the baby, cradling baby, changing the baby's nappy, wrapping them up warm, giving baby a cuddle, giving the baby attention, talking to the baby, comforting the baby, and putting the baby to sleep | Trying to find out what is wrong with the baby, making the baby comfortable, pampering the baby, understanding the baby, and treating the baby | Giving the baby a bath, nursing the baby, letting the baby see its mum, encouraging the baby not to cry, keeping the baby away from fireworks and helping the baby | Burp/wind baby, change baby's nappy, calming the baby down, not leaving the baby alone, giving the baby attention, giving the baby a hug, lifting the baby up, opening or closing windows depending on the temperature, and putting the baby to sleep | Putting the baby on its back, rocking the baby, soothing the baby, cleaning the baby, supporting the baby's back, giving the baby whatever it needs, getting the baby's mum, learning the baby's crying tones, giving the baby love, making the baby comfortable, helping the baby find something that is lost, using a timer to know when the baby's feed is due, taking the baby out of bed, taking the baby to the toilet, and taking care of the baby | Taking the baby out of its buggy, making sure the baby doesn't walk into doors, wiping the baby's tears, comforting the baby, letting the baby have a stretch, not letting the baby go outside, getting rid of robbers, seeing what the baby needs then giving it to them, nursing the baby, making sure someone doesn't jump on the baby, talking to the baby, testing the bath to make sure it is the right temperature, and letting the baby get its own way |
| **Safety** | | | | | |
| - | - | keep away from fireworks | - | - | - |
| **Give Comforter** | | | | | |
| Giving the baby a dummy | Giving the baby a soft blanket, and giving the baby Bongela if it was teething | - | Giving the baby a dummy and giving the baby a chew toy | Giving the baby a soft blanket | - |
| **Feeding** | | | | | |
| Giving the baby milk, and giving the baby food | - | - | Giving the baby milk, and giving the baby food | - | - |
| **Theme 2: Distraction** | | | | | |
| **Play** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Playing with the baby, making funny noises, singing to the baby, tickling the baby, and making the baby laugh | Making a funny face and dancing with the baby | - | Singing a song to the baby, doing a funny dance, playing with the baby, making the baby laugh and tickling the baby | - | Pulling a funny face |
| **Objects** | | | | | |
| Giving the baby toys to play with, reading a story to the baby, letting the baby watch TV, and putting the baby in a rocking chair | Outdoor play (e.g. swings) and showing them their reflection in the mirror | Letting the baby draw | Letting the baby watch TV, giving it a toy to play with, reading it a story, and buying the baby a pet | Giving the baby a transitional object, taking it a drive in the car, putting the Hoover on, putting the baby in a baby bouncer, telling the baby that Santa will come, and putting the radio on | Telling the baby it will get a treat and letting the baby draw |
| **Outdoors** | | | | | |
| Taking the baby out a walk and taking the baby to the park | - | Taking the baby out for fresh air | Taking the baby out for a walk | Taking the baby out for fresh air and taking the baby to the toy shop | - |
| **Theme 3: Personal Behaviours** | | | | | |
| **Stop Negative Behaviours** | | | | | |
| - | - | Stopping annoying the baby, not being selfish, not giving the baby a fright, going back for the baby if you left it somewhere, and removing a scary toy | - | - | Turning down loud music |
| **Do Positive Behaviours** | | | | | |
| - | - | Saying yes instead of no | - | - | Telling the baby its okay, take the baby away from the zoo if scared, and taking the baby away from bad parents |
| **Negative Behaviour** | | | | | |
| Telling the baby to stop crying/ be quiet | - | - | - | - | Telling the baby to shut up |
| | | | | | |
| *Uncodeable* | | | | | |
| - | Born | - | - | Go work | Put a warning sign on it |

**Table 7.10: Group Task Comparison of Phase 2 ROE and Control Groups for the question "What things can you do to help a baby who is crying?"**

| PRE INTERVENTION | | | POST INTERVENTION | | |
|---|---|---|---|---|---|
| COMMON | ROE | CONTROL | COMMON | ROE | CONTROL |
| **Theme 1: Care** | | | | | |
| **Medical** | | | | | |
| - | Take to doctors and put a plaster on a cut | Give medicine | Taking baby to the hospital, and putting a plaster on the baby if they were hurt | Give medicine | Nursing the baby and giving 1st aid |
| **Care-Giver** | | | | | |
| Putting the baby to sleep, giving the baby a cuddle/kiss, talking to the baby, cradling the baby, changing the baby's nappy, winding the baby, calming the baby down, lifting the baby up, and their mum or dad being there | Giving the baby attention and treating the baby | Looking after it, brushing its hair, keeping the baby at the right temperature, smiling at the baby, not letting the baby bump into things or climb onto things, comforting the baby, loving the baby, saving the baby from drowning and putting the baby in a baby carrier | Put baby to sleep, give baby a cuddle/kiss, talk to baby, rock/cradle baby, change baby's nappy, give to parents, give baby a bath, and give baby what it wants | Catching the baby if it was falling, giving the baby attention, calming the baby down, telling the baby to stop crying, holding the baby, soothing the baby, rubbing the baby's tummy, putting the baby on the potty, making the baby feel better, and making the baby happy | Lifting the baby up, putting hot water in the bath if it is too cold, burping the baby, spoiling the baby, and giving the baby love |
| **Safety** | | | | | |
| - | - | Putting a safety gate on the stairs and putting on the baby's seat belt | - | - | - |
| **Give Comforter** | | | | | |
| Giving the baby a dummy | Giving a teething toy, and giving the baby teething gel | Giving the baby a blanket | Giving the baby a dummy | Putting teething cream on the baby's gums and giving the baby teething tablets | Giving the baby a blanket and a teething ring |
| **Feeding** | | | | | |
| Giving the baby milk, and giving the baby food | - | - | Giving the baby milk, and giving the baby food | - | - |
| **Theme 2: Distraction** | | | | | |
| **Play** | | | | | |
| Dancing with the baby, singing to the baby, tickling the baby, tiring the baby out, making the baby laugh, and playing with the baby | Drawing a funny face, getting the baby a friend to play with, and taking the baby to a mother and toddler group | Taking the baby swimming, and letting the baby do what it wants | Singing to the baby, doing funny things for the baby, playing with the baby, and tickling the baby | Taking the baby to soft play and putting on a show for the baby | Dancing, clapping your hands, going to the swimming baths, and whistling |
| **Objects** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Put in baby bouncer, give baby a teddy, give baby a toy, and put TV on | Swing, bounce on trampoline, going on a bouncy castle, giving the baby pens/pencils, reading the baby a book, and going on a slide with the baby | Putting the baby in a baby carrier, playing an instrument for the baby, pushing them in a swing, and shaking a bottle | Bouncing the baby on a bouncy chair, getting the baby a toy to play with, getting the baby a teddy bear, reading a book to the baby, pushing the baby in a swing and letting the baby watch TV | Putting the baby in a baby walker, putting the baby on a baby trampoline, putting the baby in a ball pit, and taking the baby a drive | Giving the baby a puppet show |
| **Outdoors** | | | | | |
| Taking the baby out a walk, taking the baby to the park, and taking the baby for fresh air | - | - | Taking the baby out for a walk | Taking the baby out for fresh air | Taking the baby to the park |
| **Theme 3: Personal Behaviours** | | | | | |
| **Stop Negative Behaviours** | | | | | |
| - | - | Not letting older siblings break the baby's toys | - | Stopping shouting at the baby | - |
| **Do Positive Behaviours** | | | | | |
| - | - | Cheering up the baby | - | - | - |
| **Negative Behaviour** | | | | | |
| - | Tape mouth shut | Making the baby shut up, give gun and just leave it until it stops | - | Take out of bin if fallen in, and unlock from cupboard | Take out of box |
| | | | | | |
| *Uncodeable* | | | | | |
| - | - | Ride their dog and lock the cat | - | Tomorrow and pull nail out | Burned itself, give mild, burglar alarm and make sure it doesn't follow anyone to the gym |

## 4.7 Instructor Diaries

### 4.7.1 Programme Fidelity

Table 11.1 and 11.2 show the number and percentage of aims which were fully completed, partially completed and not completed by Phase 1 (Table 11.1) and Phase 2 (Table 11.2) instructors. Table 11.3 shows the number of lessons doubled up for each ROE class.

**Table 8.1: Phase 1 Instructors Themes completed**

| Theme | Fully Complete | Partially Complete | Not Complete |
|-------|----------------|--------------------|--------------| 
| 1* | 15/19 (79%) | 2/19 (10.5%) | 2/19 (10.5%) |
| 2 | 16/17 (94%) | 1/17 (6%) | 0/17 (0%) |
| 3 | 16/18 (89%) | 1/18 (5.5%) | 1/18 (5.5%) |
| 4 | 15/16 (94%) | 1/16 (6%) | 0/16 (0%) |
| 5 | 14/15 (93%) | 1/15 (7%) | 0/15 (0%) |
| 6 | 14/14 (100%) | 0/14 (0%) | 0/14 (0%) |
| 7 | 19/20 (95%) | 1/20 (5%) | 0/20 (0%) |
| 8 | 12/13 (92%) | 1/13 (8%) | 0/13 (0%) |
| 9 | 10/10 (100%) | 0/10 (0%) | 0/10 (0%) |
| **Overall** | **131/142 (92%)** | **8/142 (6%)** | **3/142 (2%)** |

* One diary for Theme 1 not included due to instructor change.

As can be seen from Table 11.1 all instructors in Phase 1 schools scored 2 out of 9 Themes (6 and 9) as fully complete. Of the 142 aims, 92% were fully completed; 6% were partially completed and 2% were not completed. For Theme 1, one of the instructors changed after Theme 1 therefore we did not get an instructor diary for Theme 1 for one of the schools.

**Table 8.2: Phase 2 instructors Themes completed**

| Theme | Fully Complete | Partially Complete | Not Complete |
|-------|----------------|--------------------|--------------| 
| 1 | 18/21 (86%) | 3/21 (14%) | 0/21 (0%) |
| 2 | 17/18 (94%) | 1/18 (6%) | 0/18 (0%) |
| 3 | 13/13 (100%) | 0/13 (0%) | 0/13 (0%) |
| 4 | 16/18 (89%) | 2/18 (11%) | 0/18 (0%) |
| 5 | 12/13 (92%) | 1/13 (8%) | 0/13 (0%) |
| 6 | 15/15 (100%) | 0/15 (0%) | 0/15 (0%) |
| 7 | 15/16 (94%) | 1/16 (6%) | 0/16 (0%) |
| 8 | 13/14 (93%) | 1/14 (7%) | 0/14 (0%) |
| 9 | 9/10 (90%) | 1/10 (10%) | 0/10 (0%) |
| **Overall** | **128/138 (93%)** | **10/138 (7%)** | **0/138 (0%)** |

As can be seen from the table 11.2, only 2 Themes (3 and 6) had all of their aims fully completed by all instructors in Phase 2 schools. Overall 93% of aims were fully completed and 7% of aims were partially completed. There were zero aims not completed by Phase 2 instructors.

As part of the instructor diaries we asked instructors to complete all lesson dates. This allowed us to work out how many lessons had been doubled up throughout the programme. Pre-testing was completed by mid-October 2011 to allow ROE instructors to start the programme. Start dates varied from 4th October – 24th November 2011. As some instructors were late in starting the ROE lessons most had at least two lessons doubled up (if the pre-family and family or family and post-family lessons had been joined together in any Theme then this counted as two lessons doubled up).

**Table 8.3: Phases 1 & 2 Lessons doubled up**

| | Number of lessons doubled up (out of 27) | | | Number of lessons doubled up (out of 27) | |
|---|---|---|---|---|---|
| **Phase 1** | Class 1 | 10 (37%) | **Phase 2** | Class 11 | 10 (37%) |
| | Class 2 | 8 (30%) | | Class 12 | 6 (22%) |
| | Class 3 | 19 (70%) | | Class 13 | 14 (52%) |
| | Class 4 | 5 (18.5%) | | Class 14 | 6 (22%) |
| | Class 5 | 10 (37%) | | Class 15 | 4 (15%) |
| | Class 6 | 0 (0%) | | Class 16 | 8 (30%) |
| | Class 7 | 15 (55.5%) | | Class 17 | 6 (22%) |
| | Class 8 | 6 (22%) | | Class 18 | 2 (7%) |
| | Class 9 | 0 (0%) | | Class 19 | 14 (52%) |
| | Class 10 | 12 (44%) | | - | - |
| **Average number of lessons doubled up** | **8.5 (out of 27)** | | | **7 (out of 27)** | |

The numbers in the table represent how many lessons were doubled up in each class, numbers are split by classes as some schools had more than one class participate in the ROE Programme.

Table 11.3 shows that across Phase 1 & 2 only two instructors did not double up any lessons. The average number of lessons doubled up for Phase 1 instructors was 8.5 (out of 27) and for Phase 2 instructors was 7 (out of 27).

Instructors were also given the opportunity to record individual pupil engagement during each Theme. However, insufficient data was recorded so this data was not used.

## 4.7.2 Instructor Comments

Within the instructor diaries, instructors had the opportunity to give comments regarding individual lessons and class engagement. Across all lessons many of the instructors gave detailed comments with interesting points. Themes across their comments and differences were identified and are summarised below. Phase 1 and 2 instructor comments are reported together and any differences between the two groups have been identified.

From the comments five categories emerged:

- Comments about pupils
- Comments about Mother and baby
- Comments about school and teacher
- Comments about programme
- Any Issues

**Comments about pupils**
Generally comments about pupils were positive suggesting that they were enthusiastic and engaged well, particularly during the family sessions.

Initial comments stated that most of the children were very excited to be starting Roots of Empathy, meeting the baby and they asked lots of questions. A few instructors stated that the class was initially quite rowdy and chatty, so they talked about ground rules and brought these up in following sessions when pupils became rowdy again. As the sessions progressed most of the children engaged well. There

were more comments from the Phase 2 instructors about the class becoming distracted and noisy, and one of the instructors with a younger group in Phase 1 gave similar comments.

All instructors stated that the pupils had lots of questions for the baby's Mother when she was visiting the class, especially as the sessions progressed. Nearly all instructors mentioned that the children were respectful to Mother and baby. No-one stated that their class did not act respectfully but on a few occasion some classes had to be reminded to be quiet around the baby and not to be too rowdy.

From the comments it would seem that most of the pupils appeared to grasp the concepts very well and understood the seriousness of safety and how to care for a baby. It was commented that most of the pupils were shocked by how a baby could get hurt, however one class did laugh at the 'never shake a baby' demonstration and did not take it seriously.

Generally instructors thought that the children worked well in groups. It was stated that the younger children (in Phase 2) found it harder to work on their own and give their own answers without looking to their peers.

The Phase 1 instructors tended to state that the children were beginning to talk about their own feelings and experiences more than the Phase 2 instructors. The Phase 2 instructors (and one in Phase 1) made more comments that the children seemed to find it difficult to express themselves or understand temperament traits.

All the instructors commented that their class noticed changes in the babies, and some stated that the class were amazed by some of the changes especially when they looked back on measurements and pictures during the final Theme.

Comments suggested that the pupils had a sense of pride of their Roots of Empathy baby and all classes were sad when the sessions ended.

**Comments about Mother and baby**
The Mothers involved in ROE were seen by the instructors to be enthusiastic and engage well with the children. There were two Mothers who were mentioned to be quiet and a bit overwhelmed at the start but as they got to know the class they became at ease and engaged well.

All instructors mentioned milestones and stated that the Mothers were happy to talk about this. The children in some classes were able to see some of the babies reach a milestone of crawling for the first time and were amazed by it.

Comments suggested all the Mothers were emotional in the end and happy to have been involved.

**Comments about school and teacher**
Three of the Phase 1 instructors stated that the teachers contributed well and supported them in their delivery. They had worked with those teachers last year and so the teachers knew what to expect and positive relationships had been built.

Any comments made about teachers suggested that they were co-operative and supportive.

It was mentioned in one school that there was not enough space to deliver the sessions, allowing the children to sit around the instructor. However, the class was arranged better by the end of Theme 1 to resolve this.

Two of the instructors stated that their class was much more disruptive when their usual teacher was absent.

Most instructors stated that the children were more forthcoming with their stories when their teacher had shared a story as had the instructor.

**Comments about programme**

Some of the classes had children who were in care or adopted so the instructors had to be sensitive when approaching this is during Theme 8.

The books used in each of Themes were well received by the children and several instructors commented that the pupils often asked for them to be read again. One instructor mentioned that their pupils were slightly upset to find out that there was not a story in one of the sessions when they had hoped for one.

It was mentioned that the doll worked well as a visual, particularly for the children who didn't grasp all the concepts straight away.

The Phase 2 instructors in particular commented on how much the children enjoyed the drawing activities and engaged in this.

Most of the Phase 1 instructors (apart from one) mentioned the visual of shaking an egg in a jar to have a positive effect on the children, and it was the session mentioned as the most engaging for the children.

**Any Issues**
Some instructors commented that lesson duration was longer than anticipated. It was reported that certain activities were unable to be completed due to time constraints by a few instructors e.g. there was not enough time to record the CD in Theme 1; all students questions could not always be answered and not everyone got a chance to change the nappy on the doll in Theme 3. One instructor stated that most of the lessons took at least 1 hour rather than the 45 minutes allocated.

It was stated by two instructors that the class size was too big to ensure that all children were always engaged during lessons.

Two instructors in Phase 1 stated that the literacy levels were too low in their class for some of the activities and individual help had to be given. The same instructors stated that some of the children struggled with some of the concepts and they had to explain them in more detail than was provided.


## *4.8 Teacher comments*

An online survey was e-mailed to all ROE teachers yielding 10 out of 19 responses (53%). Eight questions in total were asked, designed to gather views related to the implementation of the ROE Programme (five questions) and the ROE project (three questions). The questions were:
- What were your expectations of the Roots of Empathy Programme?
- How far have your expectations been met?
- Do you think the Roots of Empathy Programme has had an impact on the pupils in your class? Yes/No
  - Please explain with regards to empathy, prosocial behaviour, aggression, class climate, knowledge of infant development, recognition of emotions, wellbeing or any other areas you feel there has been an impact
- Do you have any suggestions for improvements/changes to the implementation of the Roots of Empathy Programme in your classroom?
- Any other comments you would like to make on the implementation of the Roots of Empathy Programme in your classroom?
- What are your views on the Roots of Empathy testing which was carried out in your classroom by researchers from Psychological Service?
- Do you have any suggestions for improvements/changes to the testing process which was carried out in your classroom?
- Any other comments on the Roots of Empathy research project?

Questions were answered by all 10 respondents, with the exception of two questions inviting 'any further comments', which were only answered by some (60% and 70% respectively).

Views on the ROE Programme and research project were as follows:

## 4.8.1 ROE Programme

<u>What were your expectations of the Roots of Empathy Programme?</u>

In terms of delivery of the ROE Programme, the majority of teachers expected it to be an overall positive developmental experience for the pupils resulting in increased understanding, empathy, respect and tolerance towards others both in school and in the home. They expected the children to obtain an increased understanding of relationships, feelings, conflict resolution and a more developed understanding of "*consequences of actions*". Learning about parenting and babies was also anticipated, how to care for their needs and development and gain an understanding of how babies interact and respond to others. Other expectations included more effective communication, becoming less critical of each other and increased "*social awareness*". They also hoped the programme would encourage children's ability to work in a harmonious group environment, talk about feelings, have "*empathy towards one another*" and help develop the emotions of children who have a "*detachment from their parents or who are troubled in any way*".

<u>How far have your expectations been met?</u>

Almost half of the teachers reported their expectations had been met and the programme was "*a very positive and rewarding experience*" for the children. Most felt it was delivered well, with some observing an increase in knowledge, increased recognition of emotions, a positive effect on relationships and behaviour and a general increase in "*sense of community and caring*" within the classroom. One was "*very impressed*", observing their students were able to *"transfer the knowledge and skills gained through ROE in everyday contexts*" and that "*every child can identify feelings and emotions in others by facial expression and body language*", which was a credit to the programme. However, two expressed reservations as to whether the ROE Programme was exclusively affecting behaviour or whether other social programmes running alongside it were also instrumental (e.g. PSHE).

Others felt expectations had been met "*to a certain extent*", but had hoped that a higher proportion of children would have responded more positively to the programme, whilst others observed their class in general was "*too immature*" to "*fully understand the links*" between the ROE visits and the Themes. One observed that whilst the children appeared to engage during the baby visits, they did not participate as much during the other visits and many children are still only able to articulate basic emotions (e.g. happy or sad) rather than more complex emotions.

<u>Do you think the Roots of Empathy Programme has had an impact on the pupils in your class?</u>

The majority (80%) reported the ROE Programme had an observable impact on pupils in their class. However, detailed responses to this question were mixed. Whilst a few reported a clear impact, many reported an impact "*to some extent*" and a few reported no impact at all.

Many teachers observed changes in behaviour in terms of increased knowledge of infant development (KoID) (e.g. never shake a baby) and recognition of emotion by facial expressions and body language. One teacher observed an understanding of the messages that "*bullying bruises the heart*" and "*love grows the brain*", with others observing empathy towards the baby, increased confidence in themselves and an increased willingness to share "*thoughts, feelings and fears*". However, some teachers noted that of those children who displayed these behaviours, these changes would have been expected from these particular children (or they could have displayed the behaviours before implementation of ROE). In terms of immediate impact, one teacher observed a difference in the children's behaviour during the ROE lessons (but not out with them), whilst another observed "*respite*" being given to some children upset by "*anti-social behaviour shown throughout the week by a smaller number of children*". In terms of a prolonged positive impact of ROE, one teacher noted that one boy in particular began the year with "*severe anger issues*" and is now "*very sociable*", "*happy*" and more in control of his emotions. However, another teacher noted that as other social and emotional learning programmes were running at the same time, this may also have impacted behaviour, making it difficult to isolate the true impact of ROE.

Some teachers felt that little difference was observed in general behaviour towards each other in terms of aggression and empathy and their ability to be reflective about causing hurt or harm to others. Some

suggested the impact of ROE may not be seen until later in the children's lives despite the children appearing to know "*all of the 'right' answers*" during the ROE sessions. They believed the pupils found it difficult to "*transfer the knowledge from the lessons into real life situations*". This contrasts with a previous observation made by a teacher who believed the children did "*transfer knowledge*". The latter was supported by a further observation that the children have "*made positive steps towards modifying their future behaviour*" as a result of the programme, in terms of anticipating "*the impact of their actions*" and thinking "*more carefully before responding*", illustrating that observations were extremely mixed.

Do you have any suggestions for improvements/changes to the implementation of the Roots of Empathy Programme in your classroom?

Further suggestions included that whilst "*overall delivery of the lessons […] was very good*", some felt the programme could be more interactive since lessons were "*a little bit too long*". As lessons required children to sit for long periods, it would be beneficial if "*learning was more active, with more action and follow up tasks*" together with tasks being more "*detailed*" as some thought they were "*too simple*". Task repetition was also observed (e.g. "*a lot of drawing*") and it was felt that activities could be more diverse and given on a rotational basis to groups of children rather than one task to all the children. One teacher reported that whilst some children experienced difficulty with "*use of unfamiliar Canadian words*", they felt it was "*good for the children to expand their vocabulary*". One suggested a "*timetable for visits*" to be given in advance, along with a "*library of ROE fiction books to support and reinforce learning*". "*More time after the stories*" was also suggested as there were "*a lot of good ideas for follow up discussion*". Interaction with other colleagues was also sought in order to discuss comparisons between schools with "*different socio-economic backgrounds*".

Any other comments you would like to make on the implementation of the Roots of Empathy Programme in your classroom?

Further comments included that the learning be made "*more explicit, particularly in relation to how the children could carry the lessons over into their lives*", as not all children have "*younger siblings*" it can be difficult for some to relate their knowledge to real life situations for those who perceive the lessons to be "*boring*" or "*just about babies*". A final suggestion was that a "*good working relationship*" was "*necessary*" between teacher and facilitator and to have "*agreed ground rules*" in advance, however, one believed that teachers themselves were "*best placed to deliver*" the programme.

## 4.8.2 ROE Research Project

What are your views on the Roots of Empathy testing which was carried out in your classroom by researchers from Psychological Service?

In terms of the ROE Research Project itself, one teacher thought the testing carried out by the researchers was "*pitched appropriately and not too disruptive*" and there was some interest noted in learning results of the study. Whilst it was observed that "*children responded well to the researchers*", there were many additional comments and suggestions for improvement. Whilst one believed testing was "*accessible for most children*", many felt that certain aspects "*weren't very child friendly*" with much of the language being "*too complex*", which for some pupils was "*frustrating*". This was reinforced by others comments that testing measures were at times incompatible with pupils' level of understanding and their ability to complete the required tasks. Many also felt testing took "*far too long*" and was repetitive, with a large number of "*similar types of questions*" being asked. This was further compounded by "*immature P4 […] children*" not being able to read questions properly, resulting in many "*simply [copying] answers from their partner*". Concerns were also raised with regards to the "*layout of the questions*" being "*alien to the children*" some of which were "*ambiguous*", generating concerns about the accuracy of the collated data. It was also felt there was "*a lot of reading required*" and whilst researchers read out to the class at times to assist, "*it was still difficult for the children to follow*".

One teacher thought post-testing involving "*three researchers working with a group each*" was "*much better organised*" as the class was "*more settled*", proving to be a "*much more efficient*" use of time causing "*less distractions*" to others. However, the same teacher "*overlooked*" the information stating that

only a small number of children would be filmed and mistakenly thought the whole class would be filmed, implying some clarity of communication of this procedure would be helpful.

With regards to the teachers questionnaires, whilst one teacher felt it was a "*good idea to measure teachers [assessment of] the children's social/emotional abilities at the beginning of the programme*", another felt completing them at this time was "*challenging*", and it proved difficult to "*comment honestly on them*". Another felt that some questions were "*inappropriate*", but did not provide examples.

<u>Do you have any suggestions for improvements/changes to the testing process which was carried out in your classroom?</u>

Suggestions for improvement included modification to the testing time period, style of material (including content and format) and increasing consultation with teachers in terms of which children are selected to be filmed and whether to work in groups or as a whole class. Many also felt testing measures could be "*more child friendly*" (as detailed above), with a "*simpler set of questions*". Extending the testing period to two days in order to reduce "*impact to the delivery of the curriculum*" was also suggested, which would also enable children to become more familiar with the format of the questionnaires. There was also a suggestion that testing could be carried out online.

In reference to the style of the questionnaires completed by the children, one teacher felt the material which required the children to identify which child of three they would be from the supporting picture was the "*easiest to follow*" and "*more questions like this could be helpful*". They also felt that an increase in font size and spacing would be helpful on the "*multiple choice*" questionnaires. One also observed some children giving the "*ideal answer*" rather than what they were actually like in "*real life*" to some of the Likert scale questions. Finally, a few teachers suggested that questions could be read out by the researchers to the class as a whole which may eliminate the need for "*one-to-one support*" for those who struggled with reading, but who understood the question when read to them.

## 4.9 Head Teacher Comments

All Head Teachers (HT) of ROE schools were e-mailed the question: 'Have you noticed any changes (positive or negative) as a result of ROE taking place in your school?' yielding 6 out of 17 responses. Of total responses, half reported no changes and half reported some notable changes.

Whilst one HT reported no changes with regards to empathy they did state that they felt there was a notable increase in knowledge about 'the effect of shaking a baby' and 'some developmental milestones'. They also felt as there were already 'high levels of empathy' amongst pupils in their school, changes were difficult to assess. They observed that whilst high levels of empathy were shown towards the baby, this did not necessarily transfer to their peer relationships, but anticipated that a long term impact might be observed once the children become involved with infants as adults. This sentiment was also shared by another HT who did observe positive changes amongst the pupils but felt that the true impact of the ROE Programme may not be fully realised until the children become parents themselves.

Amongst others who noticed positive changes, an overall 'positive impact on the majority of children' was observed, as well as 'more tolerance with each other'. One HT also reported 'joy and delight' amongst the pupils during ROE lessons. One HT reported a notable change in the behaviour of 2 P4 boys in particular, stating that their 'negative behaviours' no longer escalate in the way that they previously did. The HT's direct involvement with these pupils had become much less frequent and whilst they still exhibit 'undesirable' behaviours their class teacher was now able to manage their behaviour more effectively. It was mentioned however, that being 'a year older' may also be a factor in their improved behaviour.

## 4.10 Social and Emotional Programmes

Whilst collecting data at the end of the Roots of Empathy Programme ROE and control teachers were asked to comment on any social and emotional learning programmes they had used throughout the year, as this could have had an impact on the results. Return rates for this information was 100 % in control (18/18) and 94.74 % (18/19) for ROE. Below is a table of the programmes which the ROE and control schools used, and how many in each group used particular programmes. Some teachers also mentioned assemblies, swimming, gym and one-off fun day events, however these were considered to take place in most or all schools (even if not reported) so they have not been included in the table.

**Table 9: List of Social and Emotional programmes used in ROE and Control schools, and the number of teachers, in each group, who used them.**

| ROE | | Control | |
|---|---|---|---|
| Programme | Number of teachers who used programme | Programme | Number of teachers who used programme |
| **Acer Health** | 1 | **Buddy/Peer helpers** | 1 |
| **Acer PSD** | 1 | **Certificates/stickers for personal achievements** | 1 |
| **Circle Time** | 6 | **Champion of Code** | 1 |
| **Citizenship and PSHE** | 2 | **Circle Time** | 13 |
| **Class behaviour targets** | 2 | **Co-operative learning** | 2 |
| **Class contract** | 1 | **Discussions about behaviour and how to respond and interact with others** | 1 |
| **Committees** | 1 | **Drama/Role Play** | 1 |
| **Co-operative learning** | 2 | **ECO-Health and wellbeing** | 1 |
| **Daily visualisation of personal targets** | 1 | **Education for love** | 1 |
| **Dialogue/talk guidance** | 1 | **Friendship & Anti-bullying** | 1 |
| **Fit for school** | 2 | **Fun Fridays (during lent)** | 1 |
| **H&WB Lesson** | 2 | **Golden Time** | 4 |
| **Health tips-allabourje** | 1 | **Group Points prize** | 1 |
| **Mediations** | 1 | **Health & Wellbeing lesson** | 5 |
| **Neuro Linguistic programme** | 1 | **IDL topic** | 1 |
| **NL Health programmes** | 1 | **Kodaly Music Programme** | 1 |
| **PAThS** | 3 | **Lenten aims** | 1 |
| **Proud to be me** | 2 | **Our school grounds (Queens Jubilee)** | 1 |
| **PSD** | 1 | **Out of school hours learning** | 1 |
| **RE** | 5 | **Paired & Group Work** | 2 |
| **St Mungos RE & Moral education materials** | 1 | **PAThS** | 5 |
| **Talk Talk** | 1 | **Peer encouragement in jotters** | 1 |
| **The Humans Body** | 1 | **Peers giving stars** | 1 |
| **The Learning Game** | 1 | **Personal Merit Chart** | 1 |
| **Un Rights of Child** | 1 | **Personal Points** | 1 |
| **Values** | 1 | **Playground Games** | 1 |
| **VIP Points- behaviour rewards** | 1 | **Playground lining up rewarded with play** | 1 |
| **Worry Box** | 1 | **Positive Ethos** | 1 |
| | | **PSE through music** | 1 |
| | | **Pupil council** | 1 |
| | | **RE** | 5 |
| | | **Restorative practice** | 2 |
| | | **Safety** | 1 |

| | | | |
|---|---|---|---|
| | | Star of the day certificate | 1 |
| | | Star pupil award for behaviour/effort | 2 |
| | | Story and discussion time | 1 |
| | | Tacade Citizenship | 1 |
| | | Topic work | 1 |
| | | Visiting sports co-ordinator specialist | 1 |
| | | What's the score on Bullying | 2 |
| | | Worry Box | 1 |
| | | | |
| Total = 27 | | Total = 40 | |

The time spent on these programmes varied greatly within each group. Some of the programmes were delivered in 6 or 8 week blocks or over a term, others were delivered daily or weekly. It was difficult to compare the amount of time each group spent on social/emotional programmes as they were reported in different formats: some teachers stated once a week/month, others stated specifically how many times in a week. There was also more time spent on these programmes reported by many of the Roman Catholic schools, in both ROE and control groups, as they reported more time in Religious Education than the non-denominational schools.

Within the ROE group four of the teachers did not report using any other social and emotional programmes throughout the year and one teacher specifically stated that this was because ROE took up their allocated time for social/emotional programmes. It was also noted by another ROE teacher that PAThS was undertaken in their class but only from September to October, which was before ROE started. Out of three ROE schools who undertook PAThS, one of them reported to having a weekly allocated time for this. In the control group 3 out of the 6 teachers using PAThS reported to having an allocated weekly time slot for the programme, others used it less often or occasionally. The other popular programme in both groups was Circle Time. 3 out of the 6 ROE teachers using Circle Time reported to use it weekly or fortnightly, and 7 out of the 13 control teachers used it weekly or fortnightly the rest used it when required or in less deliberately planned slots.

# Chapter 5: Discussion

ROE aims to foster emotional competence and development of empathy in primary school children. Pupils learn about feelings, caring for others and infant development through observing the parent and baby relationship. This study aimed to evaluate the ROE programme in the real world setting of a Scottish Local Authority. Using a quasi-experimental mixed model design the current study found that pupils in ROE classrooms compared to pupils in control classrooms significantly increased in their empathic behaviours (cognitive and emotional empathy) as rated through pupil self-reports, increased in their prosocial behaviour as rated through teacher reports and decreased in their inhibition (anger management scale) as rated through pupil self-reports. ROE pupils also improved in their knowledge of infant development and recognition of infant emotions. Additionally, instructors reported a very high completion rate for ROE lessons with pupils being exposed to most aspects of the ROE curriculum. However, it should be noted that many instructors doubled up lessons in most themes.

Quantitative findings are discussed under the headings of empathy, prosocial behaviour, anger management/aggression, wellbeing, and class climate. Qualitative findings are discussed under the headings of video observations (empathic, prosocial & aggressive behaviours) and group task (knowledge of infant development & recognition of emotions). Results are presented for each Phase both individually and collectively and discussed in relation to previous research. Limitations and implications of findings are also considered.

## 5.1 Quantitative Results

### 5.1.1 Empathy

Overall this study showed a significant difference between the ROE and control groups, with the ROE group increasing in cognitive empathy (distinction between oneself and another) and emotional empathy (feeling with another) (but not in sympathy) and the control group decreasing in cognitive and emotional empathy. Further investigation looked at whether each group significantly increased or decreased from their score at pre-test. ROE significantly increased in cognitive empathy but not emotional and control significantly decreased in emotional empathy but not cognitive empathy. Examination of Phase 1 & 2 results indicated that only Phase 2 pupils showed a significant difference between the ROE and control group, with ROE significantly increasing in cognitive and emotional empathy and sympathy, and the control group decreasing in all three subscales, although the control group only significantly decreased in cognitive empathy. A comparison of Phase 1 and 2 in the ROE group showed that Phase 2 increased significantly more than Phase 1 in cognitive empathy, emotional empathy and sympathy with Phase 1 decreasing in emotional empathy and sympathy. Video observation in Phase 2 schools supported these findings showing a general increase in empathic behaviours in the three schools selected. This difference may indicate a possible novelty effect in Phase 2 schools which is discussed later.

The only two ROE studies which used a specific measure of empathy have shown mixed results. Schonert-Reichl & Russell (2010) found a significant increase in empathy for ROE pupils compared to control pupils when using the Teachers' rating of Children's and Adolescents' behaviour (AR4). The current study develops this research as it supports an increase in empathic behaviours in the ROE group. However, these were measured through self-reports and observations rather than teacher reports used by Schonert-Reichl & Russell (2010). A further study by Schonert-Reichl et al (2012) used the Interpersonal Reactivity Index to measure empathic concern and perspective taking via self-report and did not find significant results. The self-report measure used in the current study differed from that of Schonert-Reichl et al (2012) which may explain differences in results.

Further analysis was conducted to examine age related effects as each Phase involved a mix of primary stages. A comparison was made between P4 and P5 pupils (P3 pupils were removed from this analysis due to low sample size). Results indicated that younger children in the ROE group increased in both cognitive and emotional empathy compared to the control group which decreased in both. There were no significant differences between ROE and control for the older children. Hoffman's (2000) theory states that empathy follows developmental stages throughout childhood with stage three (empathy for another's feelings) developing between the ages of 3 and 8 and stage four (empathy for another's condition),

suggested to develop after the age of eight. Stage three of Hoffman's (2000) theory may link to the emotional empathy subscale of our measure and stage four may link to the subscale of cognitive empathy. As our findings showed a significant difference between ROE and control groups in P4 this indicates that ROE may accelerate the development of empathy.

A comparison of high deprivation levels (Levels 1-4) and low deprivation levels (Levels 5-9) within the ROE group found a significant difference in emotional empathy. Results showed that pupils from high deprivation levels increased and pupils from low deprivation levels decreased in emotional empathy. These results are supported by video observations in Phase 2 schools. Pupils within the high deprivation level school showed the greatest increase in empathy compared to pupils within the medium/high and medium/low deprivation level schools. This may indicate a greater impact from ROE in high deprivation schools for emotional empathy.

Gender differences were explored and findings showed an increase in cognitive empathy in girls in the ROE group compared to girls in the control group for whom cognitive empathy decreased. No other gender differences were found in relation to empathy and to our knowledge no previous ROE studies have investigated gender differences in empathy.

The study investigated the impact of ROE and the influence of the presence of younger children living within the household. Results indicate lone children in the ROE group increased in cognitive and emotional empathy whereas there was a decrease on these subscales for the control pupils. It appears that the ROE programme may have a greater impact on empathy for those children who do not have younger children living in their household. This may be due to the new experience of observing a growing and developing baby.

Limitations of the empathy measure included: length of questionnaire, difficulty of some terms, and complexity of rating scale and age range of measure. To address some of the limitations, delivery of the measure was adapted to meet the ability of the class and the term 'somewhat' removed from the rating scale.

Findings from this study indicate a positive impact of the ROE Programme on empathy from children's self-reports and video observations.

## 5.1.2 Prosocial behaviour

Investigation of prosocial behaviour highlighted that most ROE pupils in the current study showed a significant difference from the control group in prosocial behaviour, as measured by teacher reports. The results indicated the ROE group increased significantly in prosocial behaviour and the control group significantly decreased. Evaluation of Phase 1 & 2 results separately indicated children in the ROE group in both Phases had a significant increase in prosocial behaviour but the control group only significantly decreased in Phase 1, although the difference between ROE and control in both Phase 1 & 2 was significant. Results evaluated by pupil self report measures investigating altruistic tendencies did not show any significant results for the data overall or when analysed separately for Phase 1 & 2. Comparison of the two Phases also showed the ROE Phase 2 group increased significantly more in prosocial behaviour as rated by teachers than Phase 1. Video observation results were mixed. However, the majority of the Phase 2 children who were filmed showed a decrease in observed counts of prosocial behaviour.

Some researchers suggest prosocialness is a naturally occurring trait in children and as they age they will naturally increase in their prosocial behaviour (Nantel-Vivier et al 2009). However, the evidence in the present study does not support this claim since control children actually decreased in prosocial behaviours, suggesting a positive impact from the ROE programme on prosocialness. This is consistent with other findings (Santos, Chartier, Whalen, Chateau & Boyd, 2011; Schonert-Reichl and Scott, 2009; Schonert-Reichl et al, 2012)

Previous research has not specifically looked at altruism in isolation but through prosocial behaviour in terms of helping, sharing and co-operating behaviours (Schonert-Reichl & Scott, 2009), which are considered altruistic tendencies (Seagle et al, 2002). A summary of research, conducted from 2000 to 2009 (Schonert-Reichl & Scott, 2009), shows evidence of significant increases for ROE children in

prosocial behaviour, prosocial characteristics and peer acceptance as measured by peer report, compared to a control group. A further study in the Isle of Man (Schonert-Reichl & Russell, 2010) also found an increase in the prosocial behaviours caring, helpful & cooperative, as reported by teachers. Our research extends this by also considering sharing and kind behaviours. These were found to increase in the ROE group.

A randomized control trial by Santos et al (2011) found immediate effects on prosocial behaviour, as rated by teachers, in both ROE groups, and maintained effects at a three year follow up in ROE group 2. Additionally, student ratings showed immediate gains in prosocial behaviour in group 2 (but not in group 1) and these were also maintained at three year follow up. The only difference noted between the groups was the year in which they received the programme. Our results are consistent with the Santos et al (2011) study; stronger positive effects were found for teacher reports of prosocial behaviour over student reports.

Schonert-Reichl et al (2012) found peer reported prosocial behaviour increased in measures of "shares, cooperates, helps other kids when they have a problem, kind, understands other kids' point of view and fair", yet no positive result was found in the teacher reported data. However, this is not consistent with our results. Despite not using peer reports, our findings indicated a positive impact from teacher reports. This difference in results could be due to the specific measures used by Schonert-Reichl et al (2012), as our results are consistent with previous ROE research reporting positive teacher report data (Schonert-Reichl & Russell, 2010; Santos et al 2011). Schonert-Reichl et al (2012) suggest that since peers and teachers will see different forms of prosocial behaviour this could explain the differences in teacher rated data compared to peer rated data. Therefore, they support the importance of capturing different points of view. This could also account for our results not being as positive for video observations of prosocial behaviour. The video observations captured only a small amount of time in the ROE class, whereas the teacher captured an overview of the class at all times in different contexts. It could be argued that, in comparison to the teacher rated questions, the video observations not gaining such strong results may be due to different types of prosocial behaviour being looked for or simply because the children did not have the opportunity to display as many prosocial behaviours in the sessions videoed. Considering aggressive behaviours reduced and empathic behaviours increased, this may suggest it was not that anti-social behaviours were being displayed, but that during the filming there was an absence of prosocial behaviour.

Further analyses showed younger children in the ROE group to increase significantly more in prosocial behaviours, as measured by teachers, than the older ROE children. This is consistent with findings from Santos et al (2011) who found ROE to be more effective in improving prosocial behaviour for younger students than for older students immediately after the programme. Our results also indicated that whilst on average control children were reported to decrease in prosocial behaviours, the younger children decreased less than the older children. Banerjee (2002) suggests as children get older they become more influenced by social norms, which play a more important role in their prosocial behaviour. Children under eight years of age are less aware of public perception and do not tend to behave according to how they want others to see them (Banerjee, 2002). As children's behaviour appears to be less influenced prior to age eight, there may be a possible peer effect creating the difference between P4 and P5 children.

A comparison of high deprivation levels (1-4) and low deprivation levels (5-9) within the ROE group found a significant difference in altruism. The results showed pupils in low deprivation schools to have increased more in altruistic behaviours than the pupils in high deprivation schools. This suggests that ROE had more of an impact on altruistic tendencies in schools where there is less deprivation. For the control group, there were no significant differences in altruism, however, the children in high deprivation schools were reported by teachers to decrease more in prosocial behaviours than those in low deprivation schools.

Further analysis into gender differences showed ROE boys increased more in the teacher report of prosocial behaviour than girls. However, there was no difference between girls and boys in the control group. This could suggest ROE has a greater impact on prosocial behaviours for boys. Yet it is important to note that boys in this group initially reported lower levels of prosocial behaviours than girls and at post-test were still not at the same level as them. Previous research has not found gender effects of the

intervention on prosocial behaviour (Schonert-Reichl et al, 2012) and so further research would be needed to validate this finding.

The presence or absence of younger children living within the household revealed an increase in both ROE groups and a decrease in both control groups; no other effects were found for this analysis of prosocial behaviour.

Limitations of the measures used may account for some of the differences in results. In the Altruism Drawing Measure some children completed the questionnaire in terms of identifying with the picture, e.g. if they were in a wheel chair in reality they selected that person instead of the one helping the person in the wheel chair. Additionally, some children didn't understand why they had to pick someone to be in each picture and worried about what it meant, although they were reassured. It was noted with the measure used, it was not always clear which child in the picture was considered the altruistic one and the situation may have been too ambiguous for children.  A point to note is that the use of teacher reports over self reports may be more valid. Children may have felt peer pressure when completing the measure, especially as it was clear to see what person they had chosen to be.

These results give weight to previous research suggesting ROE has a positive impact on prosocial behaviours, as reported by teachers. A particularly striking result is the control group decreased in all age groups in their prosocial behaviours over the year suggesting a real impact in the ROE group.

## 5.1.3 Anger Management

Overall this study showed a significant difference between ROE and control groups, with ROE decreasing in inhibition (turning emotion inward) and the control group increasing. Further investigation showed that the ROE group significantly decreased in inhibition, but the control did not significantly increase. Examination of Phase 1 & 2 results indicated that only Phase 1 pupils showed a significant difference between the ROE and control group, with ROE significantly decreasing in inhibition and emotion regulation and the control group increasing on these subscales (but not significantly). This finding is interesting since if inhibition decreased then it may have been expected that emotion regulation would increase with pupils more capable of managing their anger. A comparison of Phase 1 and 2 in the ROE group showed that Phase 1 ROE pupils decreased in emotion regulation compared to Phase 2 ROE pupils who increased on this subscale. Video observations in Phase 2 schools supported the increase in emotion regulation in Phase 2 pupils with the findings revealing a general decrease in counts of aggressive behaviours in the three schools selected.

ROE research has previously focused on proactive, reactive, physical, indirect and relational aggression. Prior findings have been positive with ROE children decreasing in aggressive behaviours (Schonert-Reichl & Scott, 2009). Santos et al (2011) found teacher reports of pupil aggression (physical and indirect) to show a significant decrease for ROE pupils, however, no significant results were found when looking at student rated results. Similarly, Schonert-Reichl et al (2012) found that teacher ratings of pupil aggression (proactive and relational) showed significant results, but for peer rated reports there were no significant results. The self report measure used in the present study differed from previous research as it measured aspects of anger management rather than aggression. This may explain why the current study has positive results for the ROE group when using a self report measure. The age range for our measure was 6-14; therefore, it is possible this questionnaire was not as difficult to understand in contrast to questionnaires used in previous research. However, a comparison of measures would be needed to confirm this.

The current study did not use a teacher rated measure of aggression, however, teachers did complete the SDQ from which a total difficulties score was calculated. Overall this study showed a significant difference between ROE and control groups, with ROE decreasing in total difficulties and the control group increasing. The control groups' increase was significant from pre-test to post-test but the ROE groups' decrease was not significant. Examination of Phase 1 & 2 results indicated only Phase 1 pupils to demonstrate a significant difference between the ROE and control groups, with the total difficulties score increasing significantly more for the control group than the ROE group. A comparison of Phase 1 and 2 in the ROE group showed that Phase 1 ROE pupils' total difficulties score increased compared to Phase 2 ROE pupils whose total difficulties score decreased. The same was found when a comparison of Phase 1 and 2 was made in the control group.

A comparison of primary stage was conducted with results indicating that in the control group P5 pupils increased significantly more than P4 pupils in total difficulties. A significant difference was also found between ROE and control pupils in P5; with ROE pupils decreasing and control pupils increasing in total difficulties. There were no significant differences between ROE and control pupils in P4 or for P4 and P5 pupils in ROE classes. These findings support an argument put forward by Tremblay (2000) and Cote et al (2006) that although physical aggression decreases from the time children begin school until the end of high school, the middle childhood years are characterised by significant linear increases in relational and other forms of indirect aggression. The current study emphasises this point since in the control group P5 children increased significantly more than P4 children in total difficulties. Results from P5 pupils in the ROE group who decreased in total difficulties compared to the control group who increased, provide support for the ROE programme.

A comparison of high deprivation levels (Levels 1-4) and low deprivation levels (Levels 5-9) was conducted, however no deprivation level differences were found in relation to anger management or total difficulties.

Gender differences were explored and findings showed a decrease in inhibition in girls in the ROE group compared to girls in the control group for whom inhibition increased. A decrease in total difficulties in boys in the ROE group was also found compared to boys in the control group for whom total difficulties increased. Previous research by Santos et al (2011) found ROE to be more effective in decreasing indirect aggression in girls than in boys. The current study extends these findings as it focuses on different aspects of aggression.

The study investigated the impact of ROE and the influence of the presence of younger children living within the household. Results indicate lone children in the ROE group decreased in inhibition and emotion regulation whereas there was an increase on these subscales for lone children in the control group. Pupils with younger siblings in the ROE group decreased in total difficulties whereas those in the control group increased. When the control group data was analysed, pupils with younger siblings decreased in inhibition and emotion regulation compared to lone children who increased on these subscales. Tremblay et al (2004) found that one of the best predictors, of high physical aggression, was having young siblings. Our findings verified this point as they showed that those children who had a younger sibling decreased in inhibition and emotion regulation from pre-test to post-test, while those who did not have a younger sibling showed an increase in inhibition and emotion regulation. The difference between children who did have a younger sibling and those who did not was significant for both inhibition and emotion regulation. For ROE pupils there was not a significant difference between those with a younger sibling and those without. In accordance with Tremblay et al's (2004) point it is possible that ROE bridges the gap between those with and without younger siblings with regards to aggression.

Limitations of the anger management measure included: some pupils were confused by the wording of the rating scales 'Hardly Ever', 'Sometimes' or 'Often' e.g. for the statement 'I hold my anger in', they thought if they did hold their anger in they should say hardly ever because they were hardly ever angry. Also some pupils' mentioned that they didn't lose their temper so found it hard to answer about what they did when they lost their temper.

The current research extends the findings of previous research due to the focus on anger management rather than aggression. Findings from this study indicate a positive impact of the ROE Programme on anger management/aggression and total difficulties, from children's and teacher's self-reports and video observations.

## 5.1.4 Wellbeing

The current study did not find any significant differences between ROE and control groups for any of the measured subscales of wellbeing. Overall there was a decrease in positive emotion and positive outlook in both groups. Examination of Phase 1 & 2 results indicated that for Phase 1 both ROE and control groups decreased in positive emotion and positive outlook, but in Phase 2 the ROE group decreased in positive emotion compared to the control group who increased, and both ROE and control groups decreased on positive outlook. A comparison of Phase 1 and 2 also showed no significant differences for wellbeing. Guidelines from the measure used suggested data can be removed for pupils who score

either 3 or 14/15 on the social desirability subscale. Therefore analyses were conducted again removing this data in addition to removing data for pupils who were less than eight years old (due to the age range for the measure). However, no significant results were found.

No other published ROE research has considered wellbeing as an outcome of the ROE programme. However, wellbeing was measured in the current study since it is a focus in the curriculum in North Lanarkshire. It was considered that since ROE is a SEL programme and has links with wellbeing, it was important to assess any impact the ROE programme may have on wellbeing.

Further analysis was conducted to examine age related effects, deprivation level effects, gender effects and the influence of the presence of younger children living within the household. None of these analyses showed any significant results for wellbeing.

Our results suggest the ROE programme did not have a significant or positive effect on pupils' wellbeing. However, as wellbeing is a main focus of the curriculum in North Lanarkshire, all of the schools involved in this research would have been participating in various Social and Emotional Learning programmes which would centre on wellbeing. It is possible some of the control schools may have completed more SEL programmes throughout the year than ROE schools since some ROE class teachers commented that the ROE programme fulfilled all of their allocated time for SEL programmes. This may explain why we did not see a difference between ROE and control groups as both were participating in programmes to promote social and emotional learning.

The findings of this study show a decrease in positive emotion and positive outlook in both the ROE and control groups suggesting the ROE and other SEL programmes did not specifically have a positive impact on pupils' wellbeing. It could be suggested from the findings of the current study that the ROE programme does not have a specific impact on wellbeing since the control group also decreased on the wellbeing subscales. From the results of the current study it could be interpreted that both ROE and other SEL programmes being used in the control schools did not appear to have a positive impact on pupils' wellbeing. However findings of this study do support an impact on other areas (empathy, prosocial behaviour and aggression) in the ROE group compared to the control, which could support the effectiveness of the ROE programme over other SEL programmes being used in North Lanarkshire. Although evaluations may have been conducted on some of the SEL programmes noted, further research could assess the impact of ROE compared to other SEL programmes on the outcomes of empathy, prosocial behaviour and anger management/aggression, wellbeing and class climate.

Limitations of the wellbeing measure include the age range of measure (8+). Some of the children in our study were under 8. Possibly as a result of this there was confusion regarding the measure asking to consider "the past couple of weeks"; researchers were not sure children understood this and may have been answering the questions as to how they felt generally rather than just recently.

Findings from this study indicate that the ROE programme may not have a specific impact on wellbeing from children's self reports. Increases in prosocial behaviour and empathy and decreases in aggression as shown in this study could be thought to impact wellbeing. However, there is very little previous research assessing the link between wellbeing and these outcomes.

## 5.1.5 Class climate

Generally there were not many differences in classroom environment from pre-test to post-test in any of the 19 ROE classes. The subscale of difficulty had the most positive effect in ROE classes, as the differences found showed a decrease across pupil reports of classroom difficulty. Satisfaction and cohesion significantly decreased in more classes than they increased and friction & competitiveness increased in more classes than they decreased. The teachers report of classroom environment was more positive than the pupils, however their results could not be analysed class by class due to there only being one teacher response for each class. A small majority of teachers reported the ROE classrooms to have decreased in satisfaction (although this was only one more person than the number who reported it to have increased). They also reported the classroom to have decreased in friction & competitiveness and to have increased in difficulty and cohesion. Additionally, the preferred classroom environment scale did not show much change. It was thought that pupils and teachers preferred scales would present similar scores at post testing; however, the results fluctuated with no clear points to

extract. Again, the subscale of difficulty had the most positive results with 14 out of 19 classes reporting their difficulty score to be similar to the preferred score, yet a lot of classes also reported this at pre-test. The majority of classes who reported their actual class satisfaction, friction, competitiveness, difficulty or cohesion to be closely related to their preferred had similar reports at pre-test showing only a small impact in a few classes for classroom environment.

These results do not mirror studies conducted before, but do add to the aspects of class climate investigated in ROE research. Previous research into class climate found ROE to have a positive impact on classroom environment in terms of classroom supportiveness (Schonert-Reichl & Scott, 2009). A summary of other research also found pupils in ROE classrooms felt more autonomous than children in non-ROE classes (Roots of Empathy- Report on Research, 2009). The current results may differ from previous studies due to the measure used. The present study investigated classroom environment by measuring children's satisfaction, friction, competitiveness, difficulty & cohesion, whereas previous research measured supportiveness and autonomy. It could be expected that cohesion would be needed within the classroom for children to feel supported by their teacher and peers, however, no clear difference was found in this. Another possible issue which could have affected classroom environment was indicated in the instructor diaries. It was commented by an instructor that when the usual teacher was not present in the ROE lessons the class was noisier and more disruptive. Three of the ROE classes had long term teacher absence during the evaluation which could have caused disruptions to the classroom ethos. Further comments were made by schools that the usual class teacher was not present in the delivery of the ROE lessons as they used this as development time and another teacher was present. This may have affected implementation fidelity as a programme requirement in ROE is having the class teacher involved in the lessons. However, data was not collected on the number of lessons or in which schools this occurred.

Data was collected on the number of lessons doubled up and completion rate of all aims by instructors. It may be expected that those classes which received more doubled up lessons received less benefits from ROE. The class with the most doubled up lessons (70%) had a significant increase in friction. Of the two classes which did not have any doubled up lessons, the first had significantly increased in difficulty & cohesion and the second had increased in friction and decreased in difficulty. This, again, makes it difficult to draw any conclusions. The class in which the biggest change was seen had 37% of lessons doubled up. This could suggest it is possible to double up lessons on the programme and continue to receive the same benefits as those who do not double up lessons. However, this would need to be investigated further.

The measure used in this study had some limitations, which may have contributed to the results. Some of the children found aspects of the questionnaire difficult to understand, especially the concept of a preferred classroom. It was noted by researchers, when distributing the measure that some children struggled with questions like 'pupils seem to like my class' because they did not believe they knew how other pupil's in their class felt. This may have made it difficult to answer with a simple yes or no. This highlights that some children found it difficult to see the class as a whole and understand how everyone else felt. However, it may be that teachers would have been able to achieve this and could explain teachers' responses being in a more positive direction than the pupils. It may also have been expected that teachers would have reported more difficulty in their classroom as they would expect the work to be more challenging to the children as the school year went on. Commenting on this, when completing the teacher version of the MCI-SF, a few teachers directly informed the researchers that the work was challenging but not too difficult for the children.

The implications of our study on class climate lack clarity. It would appear for this group ROE did not have an impact on the classroom environment. However, in light of decreases in aggression and increases in prosocial behaviour it is unclear as to why this was not transferred into the class environment. Some of the results could be attributed to limitations of the measure. Furthermore this evidence contradicts that of previous research, which suggested a positive impact of ROE on class climate. However, previous research did not measure the discrete categories of class climate considered in the present study. Further investigation could investigate other potential aspects of class climate ROE impacts on.

## 5.2 Qualitative Results

### 5.2.1 Video Observations

Across all 3 schools in Phase 2, analysis of video observations in ROE classrooms have indicated a positive change in observed pupil behaviours as the programme progressed. Of the twelve children who were filmed from three schools, nine demonstrated decreasing counts of aggressive behaviours and ten displayed more empathic behaviours as ROE progressed. Results from counts of prosocial behaviours were less transparent with fluctuations at various points with the majority of children showing a decrease in observed counts of prosocial behaviour.

The results for the occurrence of empathic behaviours were particularly interesting given the programme objective to foster the development of empathy thus indicating a positive impact of the ROE programme aims. Results for aggression were also encouraging.

There were some limitations which should be noted. The sample size was small in the video observations due to time and resource constraints. The tasks children were engaged in at each video observation varied across schools since the activity was set by the class teacher. This may have had an impact on the types of behaviour observed in the children. The class teacher/Head Teacher present at the time of filming was not the same in all videos in 2 of the 3 schools. Again this was out with the researcher's control but may have had an effect on the behaviour of the children.

#### Reflexive analysis

Since the video observations were carried out by 2 researchers their own understanding and perspectives in relation to the coding of behaviours may have been affected by their own subjective beliefs and experiences. This was minimised through the utilisation of the VIG contact principles and any discrepancies in coding resolved through repeated viewing of video to arrive at consensus.

Consistency of researchers coding was not recorded accurately as discrepancies were noted following discussion when the coders could not arrive at consensus on the behaviour. This therefore meant that reliability was very high. However to ensure reliability researchers spent time discussing the parameters of each behaviour being coded prior to coding so that both researchers understood what each behaviour constituted.

### 5.2.2 Group Task

#### Research Questions

Qualitative thematic analysis revealed the same main themes for ROE and control groups at pre and post-intervention apart from Sensory/Emotional which was evident for all groups except the post-intervention ROE group in the question 'What are some ways that babies can get hurt?' Sub-themes were similar for all groups however, there were some minor differences e.g. the sub-theme 'Love/ROE Programme' was present only in the post-intervention ROE group in response to the question 'What are some ways that babies learn?'

Examination of quality of language and ROE lesson aims within responses revealed a positive impact on both children's knowledge of infant development and recognition of emotions in the post-intervention ROE group in comparison to pre-intervention ROE and pre and post-intervention control groups. Language used in the post-intervention ROE group responses highlighted teachings of the ROE programme and programme pillars, which were not evident in the pre-intervention ROE group or either of the control groups. Discussion points for Phase 1 and 2 separately are detailed below.

#### Phase 1

#### Knowledge of Infant Development

What are some ways that babies can get hurt?

In the post-intervention ROE group there was an observed difference in quality of responses. Responses offered by the post-intervention ROE group referred to the absence of a baby gate: 'no baby gate could fall down stairs', which was not mentioned by the other groups.  This may indicate learning through the ROE programme in relation to keeping a baby safe and supervised. Awareness of dangers was also evident in the post-intervention ROE group only: 'if baby put on tummy to go to sleep'; 'strangled in cord of blind'; 'parent drinking (particularly mum when pregnant)' and 'smoking next to baby'. These responses may highlight teachings of the ROE programme.

What are some ways that babies learn?

A new sub-theme 'Love/ROE' was produced by the post-intervention ROE group in both Phase 1 and 2. An example answer from this theme was 'if you love them it will make their brain grow', which is a specific teaching of the ROE programme. This is consistent with a teacher's observation that there was evidence of pupils understanding of the ROE message that 'love grows the brain'. These types of responses suggest a positive effect of the programme on the children's knowledge of infant development and the programme goals.

What are some ways to keep babies safe?

A main teaching of the programme focused on the dangers of shaking a baby: 'don't shake a baby' and 'never shake a baby' were given as answers in response to this question, only in the post-intervention ROE group. Lessons on appropriate handling of a baby were reflected in responses by the post-intervention ROE group, but not in pre-intervention or either of the control groups.  Such responses included 'hold head when lifting up', 'protect head' and 'put to sleep on back'. Similarly, with the first question, responses reflected the dangers of a parent smoking or drinking which were offered by the post-intervention ROE group: 'don't drink' and 'don't smoke', but not observed in any other group. The answers given for this question by the post-intervention ROE group suggest knowledge of infant development gained through the ROE programme.

**(Infant Facial Expression of Emotions - I-FEEL)**

What are some reasons that this baby cries?

Responses such as 'tired', 'hungry', 'too hot' and 'nappy changed' were observed across all groups, however, 'shaken' was observed only in the post-intervention ROE group. ROE teachings were further reflected in the answer 'mum was taking drugs or alcohol while pregnant', which again, was offered only by the post-intervention ROE group.  As these responses were not offered by the pre-intervention ROE group or either of the control groups, this may suggest evidence of learning from the ROE programme.

Some answers given by all groups in response to this question related to the baby being annoyed, sad, angry or someone being annoyed at the baby.  However, 'jealous of dog' was seen only in the post-intervention ROE group, which may suggest an extended understanding of slightly more complex emotions and recognition that the baby's feeling towards something may cause upset.

All groups mentioned the need for attention but 'needs love' was offered as an answer only in the post-intervention ROE group. This is consistent with an observation of one of the ROE teachers that there was evidence of pupils understanding of the ROE message that 'love grows the brain'. This may highlight learning from the ROE programme about the importance of love.

Common answers across groups referred to the baby not getting what it wanted, but 'different schedule (i.e. milk at different times)' was mentioned only by the post-intervention ROE group, indicating awareness of the importance of routine which is a teaching of the ROE programme.

How can you help a baby that is crying?

A noticeable difference in language was observed in the post-intervention ROE group with responses including 'learn crying tones'; 'soothe baby' and 'turn Hoover on to soothe baby', compared to other answers given across groups: 'rock baby' and 'cuddle baby'. This may demonstrate an understanding of more complex language in relation to comforting a baby possibly gained through the ROE programme.

Reference was made to routine by the post-intervention ROE group: 'If likes routine make sure bottle is on time' which may suggest an understanding of the importance of routine as a result of the ROE programme. A response by the post-intervention ROE group of giving the baby a 'transitional object' was also not found in any other group, this further supports learning from the ROE programme as transitional objects are a main focus throughout.

Whilst answers across all groups related to giving 'medicine' and using 'plasters', more specific answers were given by the post-intervention ROE group, 'give 1$^{st}$ aid', 'clean a wound', and 'give CPR'. Medical care is not a specific teaching of the ROE programme however, discussions during ROE lessons may have generated these answers.

**Phase 2**

**<u>(Knowledge of Infant Development – KoID</u>**

<u>What are some ways that babies can get hurt?</u>
Quality of responses offered by the post-intervention ROE group showed a greater understanding of how babies can get hurt. For example, whilst the response 'shake a baby too much' was offered by the post-intervention control group, responses given by the post-intervention ROE group showed a greater understanding of the dangers of shaking a baby; 'shake baby – brain can get damaged'. Similarly to Phase 1, responses from pupils in Phase 2 also included references to ROE lessons on safety, for example, 'caught in blind cord' and 'laying a baby on its tummy'.

<u>What are some ways that babies learn?</u>
'Baby can learn through ROE' was the only response in the sub-theme 'Love/ROE Programme' in Phase 2 which was given by the ROE group at post-intervention, indicating direct recognition of learning through the ROE programme. Throughout Phase 2, there was evidence of more informed responses given in the post-intervention ROE group which were not evident in the pre-intervention ROE group or control groups. For example, 'say a lot of words around them and baby will pick them up' was a response offered only by post-intervention ROE children (in contrast to a more general response of 'listening to people talking'). Another teaching of the ROE programme which the post-intervention ROE group mentioned was learning through senses: '5 senses-use them'. These may indicate a positive impact of the ROE programme with pupils increasing in their knowledge of ways that babies learn.

<u>What are some ways to keep babies safe?</u>
Responses offered by the post-intervention ROE group appeared to be more appropriate to babies rather than older children. For example, answers offered in the post-intervention ROE group included 'keep baby with you' or 'If adult leaves room take baby with you', whereas some of the answers offered by the post-intervention control group were more applicable to an older child, 'hold their hand (walking)', which may show a clearer understanding of the difference between a baby and a toddler. Another ROE teaching, always laying a baby to sleep on his or her back was reflected in responses given by the post-intervention ROE group only: 'don't lay baby on its stomach'.

**<u>(Infant Facial Expression of Emotions - I-FEEL)</u>**

<u>What are some reasons that this baby cries?</u>
A difference in reasoning and language was observed in the post-intervention ROE group. For example, 'wants kiss/cuddle' and 'needs hug' were suggested as reasons the baby might be crying by the post-intervention ROE group, but were not evident in responses from other groups. Also, the response of 'needs love' was again offered only by the post-intervention ROE group, but not evident in any other group (as was the case for Phase 1). Since this was only mentioned by the post-intervention ROE group in both Phases this emphasises the point made earlier that the ROE programme may have facilitated learning about the basic need for love. Such responses may reflect more informed knowledge in appropriately responding to a baby's emotion (by way of physical affection and love), which may have been generated by ROE lessons around good parenting and the importance of love. This response supports a teacher's observation that pupils understood the ROE message that 'love grows the brain'.

Whilst there were many references to being 'tired' as a reason for crying across all groups, 'needs put to sleep' was suggested only by the post-intervention ROE group. This may illustrate an understanding

from the post-intervention ROE group that the parent has an active role when the baby is crying, i.e. the parent needs to put the baby to sleep.

How can you help a baby that is crying?
Responses across all groups focused on providing various items of comfort such as 'give dummy', 'give blanket', 'cuddle' or 'kiss them'. However (similarly with Phase 1) only in the post-intervention ROE group was the term 'soothe' used: 'soothe baby' and 'If teething put cream on gums to soothe'. This may demonstrate an understanding of more complex language in relation to comforting a baby possibly gained through the ROE programme.

*It should be noted that responses referring to 'love' in previous questions ('What are some reasons that this baby cries?' and 'What are some ways that babies learn?') have been interpreted as possible learning from the ROE programme in context of the questions. However, for this question, reference to 'love' (e.g.: 'Give some love') was found only in control groups and has not been interpreted as learning form the ROE programme in this instance. Similarly, 'needs put to sleep' (in response to the question 'What are some reasons that this baby cries?') was previously interpreted as possible evidence of learning from the ROE programme, however, 'put to sleep' was a common answer for both ROE and control groups in response to this question 'How can you help a baby that is crying?' and has not been interpreted as such in context of this question .Also, shaking a baby has been mentioned by the control in some questions however, it has been noted as possible learning through ROE due to the language used by the post-intervention ROE group, suggesting a more complex understanding.*

## Implications in relation to previous research
Roots of Empathy state that the long term focus of the ROE programme is to build capacity for the next generation of responsible citizenship and responsive parenting. Immediately after the programme, learning in relation ROE lesson aims was evident in the ROE pupils in response to the group task questions.

Previous ROE research found that ROE children showed improvements with their responses reflecting attention to emotions of the baby. It was also noted that ROE programme children decreased in the frequency of which they mentioned external comfort object/ environment strategies (Schonert-Reichl et al, 2012). The current study examined the responses to this measure in a different way from previous research which asked children to individually write down as many answers as possible. As we conducted this as a group task it was not a focus to gather the number of responses and if a response was given more than once it was not always noted repeatedly. Consistent with previous findings, the ROE group in this study showed improvements in their responses, as seen in the language they used and the focus around ROE lesson aims in their answers at post-intervention

## Reflexive analysis
It should be acknowledged that as each question was analysed individually and thematic analysis of each question was carried out by a different researcher, their own understanding and perspective in relation to themes and definitions generated would inevitably have been affected by their own subjective beliefs and experiences to some extent. However, an attempt to eradicate this as much as possible was achieved through analysis of each question being examined by a second researcher and understanding of terms were also verified as a group.

# Chapter 6: Conclusion

When implemented in a Scottish Local Authority context, ROE was found to have a positive impact on pupils taking part in the programme compared to pupils in the control group. The positive impact was found in the following outcomes:

**Empathy:** Overall a positive impact was found for the ROE pupils who increased in cognitive empathy (distinction between oneself and another) and emotional empathy (feeling with another) compared to the control pupils who decreased on these subscales. When Phases were analysed separately significant differences between ROE and control pupils were only found in Phase 2; ROE increased in cognitive and emotional empathy and sympathy compared to the control group who decreased on these subscales. Video observations (in Phase 2) also identified an increase in empathic behaviours.

**Prosocial behaviour:** Overall a positive impact on teacher rated prosocial behaviours was found, with the ROE group increasing and the control group decreasing. These findings were also evident for both Phases when examined individually.

**Anger Management/Aggression:** Overall a positive impact was found for ROE pupils who decreased in inhibition (tuning emotion inward) compared to control pupils who increased. When Phases were analysed separately significant differences between ROE and control were only found in Phase 1, with ROE pupils decreasing in inhibition and emotion regulation and control pupils increasing on both subscales. Video observations (in Phase 2) identified a decrease in aggressive behaviours. A positive impact was also found for ROE pupils in total difficulties as rated by teachers. Overall ROE pupils decreased in total difficulties (emotional symptoms, conduct problems, hyperactivity and peer problems) compared to control pupils who increased. When analysed separately, only Phase 1 pupils showed a significant difference between ROE and control, with control pupils increasing significantly more in total difficulties.

Empathy and sympathetic concern towards others are factors proposed to reduce aggression towards others, highlighting associations between empathy and prosocial behaviour. High scores on the cognitive and affective scales of empathy are likely to be associated with prosocial behaviour and decreased incidences of aggression (Hoffman, 2000). Although we did not specifically analyse the link between empathy, prosocial behaviour and anger management/aggression our results show that the ROE group increased in cognitive and emotional empathy, increased in prosocial behaviour and decreased in inhibition (anger management subscale) which support Hoffman's (2000) findings.

**Knowledge of Infant Development:** Across the three questions in this measure it was clear ROE pupils had a greater understanding of infant development, particularly around the specific teachings from the ROE lesson aims and outcomes. Differences were also noted in the language used by the ROE group compared to the control group which highlighted a greater understanding of knowledge of infant development. Specific learning from the ROE lesson aims and outcomes was displayed in responses given by the ROE group for each question:
Responses to "What are some ways that babies can get hurt?" included: laying a baby on its stomach to go to sleep, brain damage (from shaking) strangled in blind cord, baby gate, parent drinking when pregnant and smoking next to baby.
Responses to "What are some ways that babies can learn?" included: if you love them it will make their brain grow, baby can learn through ROE and using senses.
Responses to "What are some ways to keep babies safe?" included: don't shake a baby, keep baby with you, protect baby's head, put to sleep on back, don't drink and don't smoke.

**Recognition of Emotions:** Across the two questions in this measure it was clear ROE pupils had a greater understanding of recognition of emotions particularly around the specific teaching from the ROE lesson aims and outcomes. Differences were also noted in the language used by the ROE group compared to the control group which highlighted a greater understanding of recognition of emotions. Specific learning from the ROE lesson aims and outcomes was displayed in responses given by the ROE group for each question:

Responses to "What are some reasons that this baby cries?" included: shaking a baby, mum taking drugs/alcohol when pregnant, needs love, needs a hugs, needs put to sleep and changes to routine i.e. "different schedule (milk at different times)".

Responses to "What things can you do to help a baby who is crying?" included: soothing the baby, learning the baby's crying tones, giving the baby love, giving the baby a soft blanket (transitional object), routine ("using a timer to know when the baby's feed is due").

Further analysis was conducted to examine the effect of Phases, primary stage, deprivation level, gender and the influence of the presence of younger children living within the household. The following positive impacts were found in the ROE group:

**Phase:** For empathy Phase 2 pupils increased significantly more than Phase 1 pupils in cognitive empathy. They also increased in emotional empathy and sympathy compared to Phase 1 pupils who decreased. For prosocial behaviour Phase 2 pupils increased significantly more than Phase 1 pupils as rated by teachers. For anger management, Phase 2 pupils increased in emotion regulation compared to Phase 1 pupils who decreased. For total difficulties, Phase 2 pupils decreased compared to Phase 1 pupils who increased as rated by teachers.

We expected Phase 1 pupils to show more positive results due to the schools and instructors being in their second year of delivering the ROE programme, and as Fixsen et al (2005) commented on average it takes between two and four years to see the full impact of an evidence based programme like ROE due to time required to resolve any implementation issues. However, it may be that the initial enthusiasm for the programme had declined in Phase 1 schools. It is also possible the ROE programme is more promoted in the first year of running which would support our findings. An additional possibility for the impact on Phase 2 pupils could be due to their instructors having just been trained and still under supervision.

**Primary Stage:** For prosocial behaviour, P4 pupils increased significantly more than P5 pupils as rated by teachers.

**Deprivation level:** For empathy, pupils in high deprivation schools increased in emotional empathy compared to pupils in low deprivation schools who decreased. For prosocial behaviour, pupils in low deprivation schools increased significantly more in self rated altruism than pupils in high deprivation schools.

**Gender:** For prosocial behaviour, boys increased significantly more than girls as rated by teachers.

The findings established from the further analysis would suggest that the ROE programme had a more positive impact for Phase 2 pupils, who were in the first year of running the programme. There was also a difference in age of pupils in Phase 1 and 2 with Phase 1 pupils, on average, being nearly a year older than Phase 2 pupils, suggesting that age may also have been a factor contributing to the differences found between Phase 1 and 2 pupils. Few significant differences were seen in the analysis of primary stage, however the majority of Phase 2 pupils were in P4 and the majority of Phase 1 pupils were in P5, again highlighting the point above that age may have an impact on the effectiveness of the programme; further research would need to investigate this. Due to few significant differences clear conclusions could also not be drawn on deprivation level and gender.

The implementation of the ROE programme in North Lanarkshire was also investigated, since this may have had a considerable effect on the results of the study, directly impacting on the learning of the ROE group. The funding for the project was not confirmed until late on in September 2011 which meant the start up had to be done within extremely tight timescales. This meant Instructors had to start programme delivery later than planned. As a result some lessons were required to be doubled up to allow the programme to finish before the school year ended. This directly affected implementation fidelity; as frequency and duration of programme lessons are internal factors key to the adherence of the programme, and crucial for high implementation fidelity (Carroll et al., 2007). Durlak & Dupree (2008) stated that more than double the effect sizes can be seen when no major implementation problems occur in evidence-based programmes. Therefore, improved results may have been found if the programme had started at an earlier date and the instructors had not been required to double up lessons. Additionally, previous research has suggested implementation issues, such as putting

programmes into a new setting, can produce reduced effects (Wiggins, Austerberry and Ward, 2012). This could indicate the results found in this study may improve with further changes and adaption to the programme's implementation from previous years, as it has been suggested that it takes between two and four years to fully establish an evidence based programme into a new setting (Fixsen et al., 2005). Other internal factors (the adherence to the coverage and content of the programme, and the identification of essential components) (Carroll et al., 2007) were considered by ROE Canada and Action for Children, as all parties aim to ensure the programme is conducted to meet the same standards as that of previous ROE programmes which have been implemented.

Six of the seven external factors which help to ensure high implementation fidelity; staff recruitment, training, coaching and evaluation, and support at both an organisational and local authority level (Fixsen et al., 2005), were all addressed by ROE Canada and Action for Children. Another factor, the evaluation of the programme implementation, was considered in the present study. This was achieved through instructor diaries, which rated how complete each instructor felt each aim was, and teacher's comments, in which teachers were asked how far their expectations had been met and about any changes they had noticed in their class. Programme fidelity was measured within the instructor diaries; the average implementation rate for Phase 1 & 2 was 93%, indicating a high level of implementation as these aims cover the key messages of the ROE programme. Some instructors commented that lessons took longer than planned, with certain activities not being fully complete due to time constraints (e.g. not enough time to record CD in Theme 1, all pupils questions could not always be answered and not all pupils got the chance to change the nappy on the doll in Theme 3). The majority of teachers involved in ROE saw the programme as having an impact on their class; however some felt the impact could have been stronger. There was also concern about the teaching in the programme with some teachers feeling it was too long or too detailed.

The points discussed indicate that a high level of implementation was achieved, although some aspects of the programme were tailored to suit the local context. This is important as the programme is being implemented into a real-life setting, so naturally it may need to be adapted.

## Limitations
The results in the current study support the effectiveness of the ROE programme in a Scottish Local Authority context. However, several limitations should be noted.

**Real life setting:** Due to the constraints of conducting a study in a real life setting it was not possible to use a randomised control trial or to have a 'true control group'. Instead, this study used a quasi-experimental design since ROE classrooms were chosen prior to research being conducted. Control schools were matched as closely as possible to the ROE schools and information was gathered regarding social and emotional learning programmes which ROE and control pupils had participated in throughout the school year. A further limitation was that the same teacher did not complete pre and post-testing questionnaires in some schools due to long term absence. To ensure this did not affect the results, analysis was run once using all data and once removing the data which included questionnaires completed by different teachers at pre and post-test, with no differences found.

**Testing:** As is a problem when using questionnaires in any research, some teachers commented that they did not believe the children completed all of the questionnaires honestly. However, a variety of methods (teacher rated questionnaires & video observations) were used to contribute to the overall results. Some teachers commented they didn't know the children well enough at pre-testing (having taught the class for six weeks) to complete the SDQ questionnaire. However, this was unavoidable as pre-testing was required to be completed before the programme began and we wanted the same teacher to complete the questionnaire at pre and post-testing. Teachers' comments on the measures used and delivery method focused on: not child friendly, too complex for some children, too long and repetitive. To overcome these issues researchers consulted with teachers on how they felt would be best to deliver the questionnaires (e.g. read out to whole class or allow pupils to complete individually) and explained each measure making sure complex language was fully understood. However, it is still possible this did not suit the whole class and their varying abilities. Another limitation of the current study was that the time spent on the group task varied across schools at both pre and post-testing. This was unavoidable due to varying abilities in each class impacting on length of time to complete the questionnaire packs and the time slot available to complete the overall testing in each school. A further limitation was the

implementation data being extracted from self reports by the instructors. Due to this, we cannot be sure that fidelity was reported completely accurately, however, this was the most realistic way of gaining this information. The current study did not collect peer reports or parents points of view which may have added another dimension to the findings and could be used in future research.

**Programme:** A limitation regarding the delivery of the ROE programme which may have affected the evaluation was the Phase 2 instructors' training being delayed, causing the programme to start later than originally planned. This also required instructors to double up lessons and post-testing to be completed at the end of Theme 8. Unknown to the researchers at the time, two of the Phase 1 instructors started the programme before pre-testing had been conducted. However, this was only one or two ROE lessons at time of pre-test. These limitations were out of the control of the research team, nevertheless, once brought to their attention steps were taken to minimise the effect these issues had on the current study. Another limitation with regards to the programme was that in some schools the class teachers were not present during the ROE lessons and it was not recorded which schools this happened in. Some instructors also commented that some concepts within the ROE programme had to be explained in more detail than was provided and that due to low literacy levels, individual help was required. This may have impacted on the pupils learning from ROE and in turn on the findings of the current study.

## Future Research
The current study's findings support and build on previous research on the ROE programme. Directions for future research could include gathering parents and peer reports as mentioned in the limitations section above. To extend the current findings future research could look at a direct link between the outcomes of empathy, prosocial behaviour and anger management/aggression; and if knowledge of infant development and recognition of emotions are linked to these outcomes. Future research could also develop the results found in our further analysis on primary stage to investigate if there is an optimum stage to implement the programme. Future research could also investigate the other areas investigated in our further analysis: deprivation level, gender and the influence of the presence of a younger child in the household.  As there have now been a number of studies measuring the impact of the ROE programme, future research could compare the effectiveness of ROE in comparison with other SEL programmes on the outcomes assessed in this study. Finally, potential future research could further investigate the outcomes of empathy and class climate as findings from previous research have shown mixed results, therefore no clear conclusion can be drawn.

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# Appendices