**University of Strathclyde**

**School of Psychological Sciences and Health**

# Promoting Positive Mental Health and Reducing Anxiety: Lessons for Living: Think well, do well.

**by**

**Sabrina Collins**

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**Abstract**

This study evaluated the effectiveness of Lessons for Living: Think well, do well (LfL), a mental health promotion intervention which aims to support children to develop the knowledge and understanding, skills, capabilities and attributes which they need for mental, social and emotional wellbeing now and in the future (Scottish Executive, 2004). It adopted a cognitive-behavioural approach, combined with the teaching of relaxation and visualisation skills. Delivered as a universal intervention to whole classes by either a teacher or psychologist, it was hypothesised that LfL would promote coping skills and emotional literacy and reduce anxiety. Three hundred and forty-five participants from 18 primary six (including composite 5/6 and 6/7) classes across nine primary schools from a local education authority in central Scotland took part in the study. Classes were randomly allocated to intervention or comparison group, and intervention classes randomly allocated to either the psychologist-led or teacher-led group. The intervention was comprised of ten lessons, delivered once a week over ten consecutive weeks. Participants completed self-report measures of emotional literacy, coping and anxiety and parents completed a parent version of the anxiety scale for their child. All measures were completed at pre- and post-intervention, and anxiety and coping skills were also completed at six month follow-up. Analyses of covariance found significant intervention effects on anxiety, emotional literacy and coping skills at post-intervention which were maintained at six months. There were no significant differences between the teacher- and psychologist-led intervention groups. Participants in the psychologist- and teacher-led intervention groups were significantly more likely to move from “at risk” on the anxiety measure at pre-intervention to no longer being “at risk” at post-intervention as well as no longer being “at risk” at six month follow-up, compared to participants in the

comparison group. Significant differences on treatment acceptability measures were found between the two intervention groups, favouring the psychologist-led group. Strengths and limitations of the study are discussed, along with implications for future research.

**Contents**

## List of Tables

# Chapter 1. Introduction

Internationally, there has been an increasing focus on prevention and promotion in the area of mental health and well-being. Reports of the U.S. Surgeon General, on mental health (US Department of Health & Human Services, 1999) and children's mental health (US Public Health Service, 2000) both highlighted the youth mental health crisis and the importance of school-based approaches in improving mental health. The National Institute of Mental Health (2001), in its report, Blueprint for Change: Research on Children and Adolescent Mental Health, emphasised that effective interventions must be disseminated to clinics, schools and places where youths and parents can readily access services. These federal initiatives resulted in the rapid growth of school-based mental health programmes and services in the USA (Paternite, 2005).

Various policy documents from the Department of Health in the UK, such as Our Healthier Nation (1998), National Service Framework for Mental Health: Modern Standards and Service Models (1999a), Saving Lives: Our Healthier Nation (1999b) and The Mental Health Policy Implementation Guide (2001) have long set out requirements for services to promote mental health for all. Promoting mental health of children and young people is a key aspect of English government policy. The two key strategy documents informing work with children and young people in England, Every Child Maters (Department for Education and Skills, 2003) and The National Service Framework for Children, Young People and Maternity Services (Department of Health, 2004) specify the importance of work to promote children's mental health and psychological wellbeing.

Within Scotland, a number of reports, including; National Programme for Improving Mental Health & Well-Being Action Plan 2003-2006 (2003), Being well-

Doing well (2004), Mental Health Foundation (1999, 2001), The Choose Life National Strategy (2002), The Scottish Needs Assessment Programme (SNAP) (2003) and The Mental Health of Children and Young People: A framework for prevention, promotion and care (2005) all argue for the promotion of mental, emotional and social health and wellbeing in schools, but do not define or discuss what skills or capacities are actually to be promoted in order to improve children and young people's wellbeing.

A Curriculum for Excellence (Scottish Executive, 2004) was implemented in all schools in Scotland in August 2010. Within this new curriculum, health and wellbeing is given the same status as literacy and numeracy. A Curriculum for Excellence (Scottish Executive, 2004) states that the health and wellbeing curriculum in Scottish schools should ensure that children and young people develop the knowledge and understanding, skills, capabilities and attributes which they need for mental, emotional, social and physical wellbeing now and in the future. The curriculum goes further in detailing outcomes and experiences that children should achieve in mental and emotional wellbeing. These experiences and outcomes include the ability to be able to express feelings and talk about them, understand that thoughts and emotions affect behaviour and learn strategies to manage these, strengthen personal coping skills and learn skills and strategies that will support in challenging times.

It is clear then that both nationally and internationally, policies suggest that the promotion of emotional wellbeing is an important area of development in schools. In Scottish schools health and wellbeing is now recognised as being the responsibility of all staff in schools, and there are clear experiences and outcomes Scottish children are expected to achieve.

Chapter 2 will continue this discussion by exploring how improved mental health can be achieved, and why this is important. It will propose that the application of a risk and promotive factors framework can reduce mental health problems and increase positive mental health. Two promotive factors, social and emotional competence and coping skills, and one risk factor, anxiety, will be identified as target areas for mental health interventions in schools. The evidence base for universal intervention programmes will then be reviewed in Chapter 3, where the need for an effective intervention programme developed within in the U.K. and an evaluation of such a programme will be identified. Chapter 4 will present the evidence base relating to best practice in effective intervention programmes and propose that, Lessons for Living: Think well, do well (LfL) (Waters, Collins, & Paterson, 2010), having been developed with these practices in mind, has the potential to be an effective intervention programme.

The study will then continue to describe a pilot study of LfL. It will show that there was evidence of positive intervention effect that suggested it was worth pursuing a larger scale study, but changes to both the intervention programme and evaluation materials were required. Chapter 6 will then present the methodology and results of the larger, main study. This chapter will demonstrate that children's levels of emotional literacy and coping were improved, and levels of anxiety reduced, for those who received the intervention LfL compared with those in the comparison group who did not receive the intervention. The results of the larger, main study will be examined and interpreted in Chapter 7. Limitations of the findings will be discussed and areas for future research will be identified.

# Chapter 2. Promoting Positive Mental Health and Reducing Mental Health Problems

The previous chapter discussed the political context for mental health interventions in schools. This chapter will first propose a dual model of mental health, that mental illness and mental wellbeing may represent separate but correlated dimensions of health. It will then be argued that mental health problems can be reduced or prevented and positive mental health promoted by the application of a risk and promotive factors framework. Two promotive factors, social emotional competence and coping skills, and one risk factor, anxiety, will be identified as target areas for universal mental health interventions in schools. This chapter will also clarify the term 'social emotional competence' and the relationship between social emotional competence, emotional intelligence and emotional literacy.

## 2.1. A Dual Model of Mental Health

For some time now mental health has been recognised as representing more than the absence of mental illness (Huppert & Wittington, 2004). Mental health is used as an umbrella term to refer to both the concepts of mental health problems and mental wellbeing, or positive mental health. Mental health problems are symptoms that meet that meet the criteria for clinical diagnosis of mental illness that are set out by the Diagnostic Statistics Manual (American Psychiatric Association, 2000). The term "mental health problems" is often used interchangeably with mental illness, mental ill-health and mental disorder, amongst others. In contrast, positive mental health has been defined as a unified state which allows individuals to realise their abilities, cope with the normal stresses of life, work positively and fruitfully and make a contribution to their community (World Health Organisation [WHO], 2004).

Some researchers have suggested that the construct of mental wellbeing is independent of the construct mental illness, based on their findings that people with a diagnosis of mental illness may have variable levels of mental wellbeing and that sizeable proportions of the general population who do not have a mental illness lack mental wellbeing (Frydenberg & Lewis, 2009; Hatch, Harvey, & Maughan, 2010; Hu, Stewart-Brown, Twigg, & Weich, 2007; Huppert & Wittington, 2004; Keyes, 2005). Mental health problems and mental wellbeing then may represent separate but correlated dimensions of health (Adi, Kiloran, Janmohamed, & Stewart-Brown, 2007; Tudor, 1996).

## 2.2. Promotion and Prevention in Mental Health

The prevention of mental disorders is concerned with reducing the incidence, prevalence, duration and recurrence of these disorders, as well as their prognosis (WHO, 2004). Conversely, mental health promotion is focused on optimal mental and behavioural health and psycho-physiological development rather than the amelioration of symptoms and deficits (WHO, 2002, 2004). Mental health promotion has been defined as the process of enabling people to increase control over, and to improve their health (WHO, 1986). Promotion and prevention are therefore overlapping and complementary activities (WHO, 2002).

### 2.2.1. Conceptualising intervention strategies.

Three categories of primary prevention have been identified (WHO, 2002): (1) indicated interventions are applied to individuals or groups who are found to already report mild symptoms (“increased risk”) for future mental health problems; (2) selective interventions are applied to select individuals or subgroups who present a significantly higher than average risk (“high risk”) of developing mental health problems; and (3) universal interventions are applied to whole populations regardless

of risk status and are generally designed to enhance general mental health or well-being (Mrazek & Haggerty, 1994).

#### *2.2.1.1. Advantages of universal interventions.*

Universal prevention programmes can provide several benefits, such as increasing population awareness, providing support and recruitment for more intensive prevention efforts, and reducing stigmatisation for those participating in targeted programmes (Offord, 2000; Stormshak, Kaminski, & Goodman, 2002). They can be integrated into community structures or organisations that serve the full population (e.g., schools, health systems), and thus promote policies or cultural practices that benefit the entire population. Furthermore, because a greater number of people are involved, universal programmes have the potential for producing large effects at the population level (Offord, 2000; Rose, 1992). As comorbidity between childhood mental health disorders is high, a single universal prevention intervention has the potential to impact upon multiple problems (Greenberg, Domitrovich, & Bumbarger, 2001). It is proposed here that universal interventions provide the opportunity to promote positive mental health and reduce mental health problems.

### 2.3. A Resilience Risk and Promotive Factors Framework

Amongst psychologists the importance of promoting health rather than simply preventing ill-health can be dated back to the 1950s (e.g. Jahoda, 1958). More recently it has been argued that positive mental health is a variable in its own right, and it is also a likely buffer against physical and mental illness (Seligman, 2008). In the last decade there has been increasing interest in the potential of preventative interventions capable of promoting positive mental health in order to reduce the risk of mental illness and psychological distress (Yirmaya, 2007). In their model of psychological wellbeing, Ryff and Singer (1996) suggested that the absence of

wellbeing creates conditions of vulnerability to possible future adversities and the presence of wellbeing could play an important protective role in the face of life stress situations. Such theory-based resilient approach places emphasis on positive mental health rather than focusing on decreasing negative factors or mental ill-health (Tomba et al., 2010).

Broadly defined, resilience refers to the process through which positive outcomes are achieved in the context of adversity (Luthar, Cicchetti, & Beckers, 2000). Two inferences, or judgements, are required then in every determination of resilience, and they relate to the experience of risk or adversity, and to positive adaptation or competence (Luthar & Cushing, 1999; Rutter, 2007). The multiple risk model proposed by Rutter (1979) and Garmezy, Masten, and Tellegen (1984) posits that developmental outcomes are a function of individual responses to risk factors; negative outcomes are linked to exposure to negative experiences, and positive outcomes are linked to exposure to positive experiences.

### 2.3.1. Risk, protective and promotive factors.

Generally, risk factors have been defined as variables that 'have proven or presumed effects that can directly increase the likelihood of a maladaptive outcome' (Rolf & Johnson, 1990, p. 387). In contrast, protective factors reduce the negative effect of adversity on child outcome (Masten & Reed, 2002). For children who succeed despite less than optimal conditions, the presence of protective factors may compensate for the risks that exist in their lives and environments (Garmezy, 1993). Protective factors, as defined by Garmezy (1983), are 'those attributes of persons, environments, situations, and events that appear to temper predictions of psychopathology based upon an individual's at-risk status' (p. 73).

The differentiation between risk and protective factors, however, is far from clear (Sameroff & Seifer, 1987), and there continues to be many theoretical and methodological limitations in both their identification (Luthar & Zigler, 1991) and application (Leffert et al., 1998). Although Rutter (1987) has argued that protective factors can only have meaning in the face of adversity, in most studies, protective factors have been defined as simply the positive pole of risk factors (Stouthhamer-Loeber et al., 1993). Sameroff (1999) proposed that a better term for the positive end of the risk dimension would be promotive rather than protective factors. Promotive factors are those that generally are associated with better outcomes at various levels of risk or adversity, while protective factors then are those that are generally associated with better outcomes in the context of higher risk or adversity (Sameroff, 2000).

While a differentiation between promotive and protective factors has been identified, this distinction is not applied consistently within the literature. For some, risk and protective factors are seen as opposite ends of the same continuum (Jenson & Fraser, 2006). The term protective factor has also been described as relating to influences that interact with risk, as well as including promotive factors (e.g. Stanley, 2010). In addition, it is not always clear when researchers state that a particular factor is a protective factor whether it may actually be a promotive factor, or both a promotive and protective factor. As a result, no differentiation between promotive or protective factor is used here, and as the current study is concerned with the mental health of all children and young people and not only those at-risk, the term promotive factor will be used.

Both the concepts of promotion and prevention may be present in the same interventions, having different but complementary outcomes (WHO, 2004). A risk and promotive factors framework to mental health promotion and prevention aims to

reduce risk factors for mental ill-health as well as strengthen promotive factors for mental wellbeing.

### 2.4. Promoting Social Emotional Competence

Social and emotional competence is the first of the three factors argued here to be important in promoting mental health. Interventions that foster social and emotional competence have been found to strengthen positive development (Epstein, Zhou, Bang, & Botvin, 2007; Riggs, Greenberg, Kusche, & Pentz, 2006). Higher levels of emotional competence can reduce subjective stress and increase feelings of wellbeing (Slaski & Cartwright, 2002) and improve coping abilities (Salovey, Beddell, Detwieler, & Mayer, 1999).

Social competence deficits are an integral part of the clinical diagnostic criteria for many disorders of childhood and adolescence (Cook et al., 2008). Studies have repeatedly shown that children with social competence deficits are at greater risk for poor school adjustment and adult psychopathology than students who are socially competent (Moffitt, Caspi, Harrington, & Milne, 2002; Newman et al., 1996; Patterson, Reid, & Dishion, 1992). A strong and consistent association has been found between depression and lower social competence (Cole, Martin, Powers, & Truglio, 1996; McCauley et al., 1993). There is also considerable literature supporting a developmental pathway whereby social competence and social support reduce the occurrence of depressive and conduct problems symptoms (Appleyard, Egeland, & Sroufe, 2007; Cole et al., 1996; McCauley et al., 1993). Other studies have shown that a lack of social competence and social support are predictive of increases in depressive and conduct problem symptoms over the course of development (Bergeron et al., 2007; Keiley, Lofthouse, Bates, Dodge, & Petit, 2003; Saint-Jacques et al., 2006; Young, Berenson, Cohen, & Garcia, 2005).

Emotional competences have been found to be an important predictor in determining life and school success. For example, adolescents with high emotional competence are happier than those with low emotional competence (Furnham & Petrides, 2003) and are less likely to be depressed, hopeless or suicidal (Ciarrochi, Deane, & Anderson, 2002). Low emotional competence has also been linked to low self-esteem and poor impulse control (Salovey, Stroud, Woolery, & Epel, 2002; Schutte et al., 1998; Schutte, Malouff, Simuneck, Hollander, & McKenley, 2002) and depression (Goldenberg, Matheson, & Mantler, 2006; Mavroveli, Petrides, Rieffe, & Bakker, 2007; Mikolajczak, Menil, & Luminet, 2007; Petrides, Perez-Gonzalez & Furnham, 2007). High levels of emotional competence have been found to be strongly related to lower anxiety (Mikolajczak et al., 2007) and lower levels of psychopathology (Schutte, Malouff, Thornsteinsson, Bhuller, & Rooke, 2007), and in a further study emotional competence was negatively correlated with depression, somatic complaints and maladaptive coping styles and positively correlated with adaptive coping styles (Mavroveli et al., 2007; Mikolajczak et al., 2007).

Children who are adept at managing their emotions may be better able to proactively cope with stressors (Buckner, Mezzacappa, & Beardslee, 2003), and thereby decrease the associated negative effects. A lack of control over emotion has been consistently associated with problem behaviours in children (Calkins & Fox, 2002; Eisenberg et al., 1996), while the ability to manage one's emotional expression has predicted more positive social functioning in middle childhood both contemporaneously and longitudinally (Buckner et al., 2003; Eisenberg et al., 1997a; Eisenberg et al., 1997b). Furthermore, studies of resilience have found that factors associated with emotion regulation (e.g., self-help skills, ego control, and ego resiliency) are related to positive adjustment across risk status, and that such factors

appear to be especially important in the context of adversity (Cicchetti & Rogosch, 1997; Cicchetti, Rogosch, Lynch, & Holt 1993; Werner & Smith, 1982, 1992).

### 2.4.1. Conceptualisation of social emotional competence.

Evidence suggests then that social emotional competence plays an important role in mental health. In order to design interventions to improve mental health through the promotion of social emotional competence, a clear conceptualisation of social emotional competence is needed.

Four models of social emotional competence can be found in the literature: The Collaborative for Academic, Social and Emotional Learning (CASEL, 2003), Denham (2005), Rose-Krasnor (1997), and Saarni (1997). For some researchers (e.g. CASEL, 2003), social competence and emotional competence are synonymous, while for others (e.g. Rose-Krasnor, 1997), they can be distinguished although inextricably interrelated. There are a number of core skills of social and emotional competence that are agreed upon by all of these models. These are displayed in Table 2:1.

Table 2:1

*Core Skills Common Across Models of Social Emotional Competence*

| Core skill | Description |
|---|---|
| Self-awareness | Being aware of, and understanding one's emotional state |
| Self-management | Emotional and behavioural regulation |
| Social awareness | Understanding emotions, empathy and sympathy |
| Relationship skills | Establishing and maintaining healthy and rewarding relationships based on cooperation |
| Social problem-solving skills | Applying decision making skills to academic and social situations, seeking help |

In each of these models the core skills comprise 'competence'. However, other models refer to these same skills but describe these skills as comprising intelligence rather than competence.

### 2.4.2. Emotional intelligence as a component of social emotional competence.

Some theorists regard the ability to manage one's emotions and social life as a form of intelligence (i.e. emotional intelligence) rather than competence. There are two construct models with which to define emotional intelligence (EI), an ability model and a mixed model that combines traits with abilities (Mayer, Salovey, & Caruso, 2000).

Ability models, originally conceptualised by Mayer and Salovey (1997), propose that EI is a type of intelligence or aptitude and therefore should correlate with cognitive ability. They posit EI as 'the ability to carry out accurate reasoning about emotions and the ability to use emotions and emotional knowledge to enhance thought' (Mayer, Roberts, & Barsade, 2008, p. 511). The skills involved in Mayer and Salovey's (1997) ability model of EI are: the ability to perceive emotions in oneself and others accurately; use emotions to facilitate thinking; understand emotions, emotional language and the signals conveyed by emotions; and manage emotions so as to attain specific goals.

In contrast to ability models, mixed EI models do not classify EI as intelligence but rather as a combination of intellect and various measures of personality and affect (Petrides & Fumham, 2001). Mixed models have defined EI as "an array of non-cognitive capabilities, competencies and skills that influence one's ability to succeed in coping with environmental demands and pressures (Bar-On, 1997, p.14).

Both ability and mixed models of EI refer to skills, or competencies. Table 2:2 shows the similarities between Mayer and Salovey's (1997) model of EI and three of the core skills in social emotional competence. As illustrated by Table 2:2, while some authors may distinguish competency based models from ability based models, there is little to support a clear distinction between the two. Interestingly, Salovey and Mayer (1990) stated that EI could have been labelled as emotional competencies, and Bar-On (1997) who developed a widely used measure of EI (i.e. the EQ-i) described it as a measure of skills or competencies. Thus it is argued here that emotional intelligence is a component of social emotional competence.

Table 2:2

*Similarity Between Models of Social Emotional Competence and Emotional Intelligence.*

| Core skill of social emotional competence | Description of core skill | Branch of Mayer & Salovey's model of emotional intelligence |
|---|---|---|
| Self-awareness | Being aware of, and understanding one's emotional state | The ability to perceive emotions in oneself and others accurately |
| Self-management | Emotional and behavioural regulation | Use emotions to facilitate thinking and manage emotions so as to attain specific goals |
| Social awareness | Understanding emotions, empathy and sympathy | Understand emotions, emotional language and the signals conveyed by emotions |

#### 2.4.2.1. *Emotional literacy*

Emotional literacy is a term that is also found in literature, particularly within the U.K. (Mayer & Salovey, 1997; Park, Haddon, & Goodman, 2003). Weare (2004) defines emotional literacy as 'the ability to understand ourselves and other people, in particular to be aware of, understand, and use information about the emotional states of ourselves and others with competence. It includes the ability to understand, express and manage our own emotions, and respond to the emotions of others, in ways that are helpful to ourselves and others' (p.2). Key social and emotional competencies that are involved in emotional literacy include: self-understanding, understanding and managing emotions, understanding social situations, and making relationships (Weare, 2004), which are the same core skills common across the four models of social emotional competence and the same skills depicted as being involved in EI by Mayer and Salovey (1997). It is therefore maintained here that emotional literacy and emotional intelligence are concerned with the same skills. The differences between the terms are not necessarily significant when compared to the similarity of features, a view shared by Wigelsworth, Humphrey, Kalambouka, and Lendrum (2010), and so it is argued here that the terms 'emotional intelligence' and 'emotional literacy' are interchangeable, and are components of social emotional competence. It is also argued here that any mental health prevention and promotion intervention can focus on promoting social emotional competencies, which includes emotional intelligence or emotional literacy, as components of social emotional competence.

### 2.5. Promoting Coping Skills

Coping skills have also been found to be a key factor in promoting wellbeing and reducing the risk of mental health difficulties, in particular anxiety. Greenberg,

Kusche, and Speltz (1991) argued that there is little doubt that the manner in which behaviour, emotions and cognitions become integrated in the first decade of development has important implications for psychological and emotional functioning throughout the lifespan. The resources available to cope with stress and the manner in which individuals actually cope may be important factors influencing patterns of positive growth and development as opposed to the onset of a host of psychological and somatic problems. Coping style, similar to EI but with a longer empirical history, has been implicated in a variety of individual outcomes, and research suggests that coping strategies are important determinants of an individual's physical and psychological wellbeing in response to negative or stressful life events (e.g. Lazarus, 2000).

Lazarus and Folkman (1984) provided a definition of coping that is now commonly used in the stress literature, defining it "as constantly changing cognitive and behavioural efforts to manage specific external or internal demands that are appraised as taxing or exceeding the resources of a person" (p. 141). As children develop, coping becomes more refined and situation-specific. Coping can be conceptualised as being either focused directly on managing a stressful situation or focused on avoiding a stressor or attending to one's emotions about the situation (Compas & Epping, 1993; Stallard, Velleman, Langsford, & Baldwin, 2001). The former is problem-focused (Lazarus & Folkman, 1984) coping, whereas the latter is generally referred to as avoidant or emotion-focused coping.

Research has examined individuals' coping styles, coping mechanisms, and the predictors and outcomes of coping (e.g., Kohn, Mertens, & Weisner, 2002; Lazarus, 2000). Problem-focused coping is typically associated with healthier, more positive outcomes (Brown, O'Keefe, Sanders, & Baber, 1986; Fields & Prinz, 1997). Whereas,

emotion-focused coping strategies such as distancing, minimisation, avoidance, and selective attention are generally considered less functional in many circumstances, and are considered an inferior form of coping (Blount, Davis, Powers, & Roberts, 1991; Jones & Ollendick, 2005; Lazarus, 2000; Lazarus & Folkman, 1984; Moos, 1992; Spirito, Stark, & Tyc, 1994; Tyc, Mulhern, Jayawardene, & Fairclough, 1995). These emotion-focused coping strategies also appear to be a psychological risk factor or marker for adverse responses to stressful life events (Holahan & Moos, 1987). Some authors have suggested that problem-focused coping is more adaptive for controllable circumstances, but that emotion-focused is actually more appropriate for uncontrollable circumstances in which people cannot enact change on the environment (Altshuler & Ruble, 1989; Compas, Banez, Malcarne, & Worsham, 1991; Donaldson, Prinstein, Danovsky, & Spirito, 2000; Stallard et al., 2001; Tyc et al., 1995).

Studies of child and adolescent coping suggested that both problem- and emotion-focused coping are important in successful adaptation to stress, and thus effective coping is likely to be characterised by flexibility and change (Compas, 1987). New demands require new ways of coping and so no single coping strategy is effective for all types of stress. Literature examining children's coping in samples such as cancer patients and hurricane survivors has found that even in these quite different samples, the strategies most often used by children are wishful thinking, emotion regulation, and problem solving, with wishful thinking commonly being most frequent (Donaldson et al., 2000; La Greca, Silverman, Vernberg, & Prinstein, 1996; Miller et al., 2000; Spirito et al., 1994 Stallard et al., 2001; Tyc et al., 1995; Vernberg, La Greca, Silverman, & Prinstein, 1996). It is argued here that by promoting children’s problem-focused coping skills for controllable situations their wellbeing

will also be enhanced. It is also proposed that interventions should aim to reduce children's avoidance of problems. However, emotion-focused strategies such as changing thoughts or feelings about problems, especially in uncontrollable situations, may be adaptive and thus also foster coping skills and ultimately wellbeing.

The developmental literature shows that coping styles may progress as children age. Donaldson et al. (2000), for example, found that younger children used a narrower range of coping behaviours than did adolescents. As children grow into adolescence, they use a wider range of coping responses, and vary their coping across situations (Brown et al., 1986; Compas, Malcarne, & Fondacaro, 1988; Tyc et al., 1995). This finding suggests that as children develop, their coping behaviour becomes more refined and situation-specific. In addition to the consistency and quantity of coping strategies, younger children and adolescents differ in the quality of coping styles employed. Younger children facing a stressor appear more likely to utilise behavioural methods of coping, whereas older children are more likely to employ cognitive methods such as problem solving (Curry & Russ, 1985; Skinner & Zimmer-Gembeck, 2007; Spirito et al., 1994). In a review of the literature, Skinner and Zimmer-Gembeck (2007) noted that cognitive coping strategies begin to appear in middle childhood. As children progress to adolescence, they are able to use more complex, meta-cognitive coping strategies. However, in general children appear to learn to cope more adaptively with age (Brown et al., 1986). They become more able to tailor coping strategies to the particular situations and are able to fluctuate back and forth between cognitive and behavioural means as they see fit (Skinner & Zimmer-Gembeck, 2007).

Coping skills are suggested to be an important promotive factor in child anxiety (Brown et al., 1986; Donovan and Spence, 2000; Peterson, Harbeck, Chaney,

Farmer & Thomas 1990; Spence, 2001). If children have good active coping skills, such as problem-solving skills and being able to seek support from others, they may be more likely to be able to manage presenting difficulties more effectively than if they used less superior coping strategies, such as avoidance. Problem-focused coping skills, positive self-talk, relaxation skills and social support are considered to enhance children's resilience to anxiety (Spence, 2001), thus they are likely promotive factors in children's wellbeing. In addition to promoting coping skills to promote mental wellbeing, interventions may also aim to reduce levels of anxiety to reduce mental health problems.

### 2.6. Reducing Anxiety

Anxiety disorders are the most common form of psychological distress reported by children and adolescents (Anderson, Williams, McGee, & Silva, 1987; Kashani & Orvaschel, 1990). If untreated, research demonstrates that children who experience high levels of anxiety, i.e. anxiety levels which are high but not clinically significant, are likely to become anxious adults who may experience chronic suffering which may affect their family, work and relationships and prevent them from enjoying happy lives and achieving their potential (Atkinson & Hornby, 2002; Barrett, 2004; Kim-Cohen et al., 2003).

Anxiety symptoms and disorders in childhood signal significant risk for other disorders and considerably interfere with children's interpersonal and academic functioning (e.g. Last, Hanson, & Franco, 1997; McGee, & Stanton, 1990). Anxious children are at increased risk of having social and academic difficulties (Pine, 1997; Wood, 2006), and are also at increased risk of developing serious secondary psychological disorders, in particular substance misuse (Kushner, Sher, & Beitman, 1990), and major depression (Kovacs, Gatsonis, Paulouskas, & Richards, 1989) in

adolescence and adulthood. These internalising disorders are also frequently associated with other psychosocial impairments, including immaturity, inattention and concentration problems, academic difficulties, poor peer relations, low self-esteem and low social competence (Ialongo, Edelsohn, Werthamer-Larsson, & Crockett, 1994; Kashani & Orvaschel, 1990; Kendall, Cantwell, & Kazdin, 1989; Strauss, Frame, & Forehand, 1987). Without treatment, childhood anxiety can have a chronic and unremitting course (Keller, Lavori, Wunder, Beardslee, & Schwartz, 1992).

The majority of children with anxiety disorders do not attend any agency for treatment (Zubrick et al., 1997), perhaps because anxiety in children does not generally present as a major behavioural management problem for parents and teachers. By the time children are referred to treatment the disorder is often well established and many of the adverse effects upon school performance and peer relationships have already occurred and are hard to reverse (Spence, 2001). Even when awareness of anxiety exists, teachers and parents tend to minimise the seriousness of the difficulty, and thus it is not surprising that the majority of children with anxiety disorders do not receive the treatment they need (Esser, Schmidt, & Woerner, 1990; Zubrick et al., 1997).

The identification of promotive factors is important, as there are many risk factors that cannot be easily altered. An alternative or additional strategy for prevention therefore is to build up promotive factors to counteract the impact of risk variables (Spence, 2001; Werner & Smith, 1992). Risk factors can potentially reduce positive mental health and increase mental health problems, whereas promotive factors may increase positive mental health and decrease mental health problems. Risk factors for development of anxiety disorders can also be risk factors for several mental health problems, including depression (Durlak, 1995; Farrell & Barrett, 2007).

Insofar as some of the variance in anxiety proves to be modifiable, then the identification and enhancement of promotive factors is important. By applying knowledge of risk and promotive factors to treatment strategies associated with childhood anxiety disorders, in conjunction with theories regarding the methods, timing, levels, and targets of prevention, equip society well for effectively preventing childhood anxiety disorders in the future. Coping skills are argued here to be promotive factors, which may improve positive mental health by facilitating children's ability to manage a wide range of stressful situations. In addition, by the teaching of coping strategies the risk of developing anxiety difficulties may be reduced (Spence, 2001; Vasey & Dadds, 2001).

### 2.7. Summary

This chapter first argued that mental health problems and positive mental health represent separate but correlated dimensions of health. It continued by defining the terms 'promotion' and 'prevention' in mental health and identifying three categories of interventions. Universal interventions, which are applied to whole categories of populations regardless of the risk status, were proposed to offer the opportunity to promote positive mental health and reduce mental health problems. A risk and promotive factors framework to mental health promotion and prevention was discussed, whereby interventions aim to increase promotive factors (i.e. those factors that are generally associated with better outcomes) and reduce risk factors (i.e. those factors that increase the likelihood of a negative outcome). The chapter then argued that mental health problems can be reduced or prevented and positive mental health promoted by enhancing social emotional competence and coping skills (promotive factors) and the reduction of anxiety (risk factor). The next chapter will review

evidence for the effectiveness of universal intervention programmes targeting social emotional competence, coping skills and anxiety.

# Chapter 3. Universal Interventions Promoting Social and Emotional Competence and Coping Skills and Reducing Anxiety

This chapter will provide an overview of universal intervention programmes and their findings, before arguing that there are common methodological problems with the research in this area that limit the conclusions drawn. It will then be proposed that there are a number of implementation factors that can also have an impact on the results found in studies of universal intervention programmes. It will be argued that there is a need for a U.K. universal intervention programme, and the evidence base will be expanded by an evaluation of a U.K. programme that considers the methodological problems highlighted in this chapter. Before providing an overview of the intervention programmes it is important to explain the process for the selection of these studies, and the exclusion of other intervention studies.

## 3.1. Process for Selecting Studies

Searches of the electronic databases International Bibliography of the Social Sciences, ISI Web of Science, APA PsycNET and IngentaConnect from 1990 onwards, as well as Google Scholar, were carried out using the key terms “primary prevention”, “mental health promotion”, “mental health prevention”, “universal interventions”, “coping skills”, “emotional intelligence”, “anxiety”, “promoting resilience”, “social emotional learning”, “social emotional competence”, and “wellbeing”. Further studies were identified from references in the articles found during initial literature searches.

A total of 61 intervention studies were found. Fourteen of these studies were excluded from this review as they were not studies of universal interventions, but instead focused on an evaluation of an intervention programme delivered as an indicative or selective (see Section 2.2.1.) intervention, or focused only on a specific

group (e.g. a minority ethnic group). Other studies were excluded as they did not contain any outcome measure relevant to the current study (n = 12), lacked critical information about the design and methodology of the study (n = 2), or because they included a significant teacher or parent intervention, as well as a pupil intervention (n = 4), and as a result the effects of the pupil intervention can not be interpreted separately from the combined effects of the pupils and parent/teacher intervention. A further seven studies were excluded as they did not include a control group. One study was excluded as it was a retrospective study and another as there were no pre-measures. Appendix 1 specifies the studies that have been excluded from this review and why. Twenty intervention studies were subsequently selected for inclusion in this review. For the purpose of this review, six of these studies have been classified as social and emotional competence interventions, seven as coping skills intervention studies and seven as anxiety intervention studies, as shown in Table 3:1.

### 3.2. Description of Intervention Programmes and Findings

In all Table 3:1 studies, programme was delivered to the intervention group by either a teacher or mental health professional, and there were intervention and control groups. Evaluation measures were assessed before and after the intervention, with some studies including longer-term follow-up measures. The control groups did not receive the intervention, but evaluation measures were completed by both groups. A brief description of the intervention programmes will now be provided, followed by an overview of the intervention effects found from evaluation studies.

Table 3:1

*Intervention Studies Included in the Review.*

| Target Area | Intervention Programme | Authors |
|---|---|---|
| Social and emotional competence | Providing Alternative THinking Strategies | Greenberg, Kusche, Cook, & Quamma (1995), Kam, Greenberg, & Walls (2003) |
| | Positive Youth Development Programme | Caplan et al. (1992) |
| | Head Start REDI | Bierman et al. (2008) |
| | Social Emotional Training | Kimber, Sandell, & Bremberg (2008a,b) |
| Anxiety | Friends for Life | Barrett & Turner (2001), Lowry-Webster, Barrett, & Dadds (2001), Lowry-Webster, Barrett, & Lock (2003), Barrett, Lock, & Farrell (2005), Barrett, Farrell, Ollendick, & Dadds (2006), Lock & Barrett (2003) |
| | Penn Resiliency Programme | Pattison & Lynd-Stevenson (1999) |
| Coping Skills | I CAN DO | Dubow, Schmidt, McBride, Edwards, & Merk (1993) |
| | Zippy's Friends | Mishara & Ystgaard (2006) |
| | Stress management training | Fridrici & Lohaus (2009) |
| | Problem Solving for Life | Spence, Sheffield, & Donovan (2003, 2005) |
| | Resourceful Adolescent Programme | Harnett & Dadds (2004) |
| | Best of Coping | Cotta, Frydenberg, & Poole (2000) |

### 3.2.1. Social and emotional competence intervention programmes.

Six intervention studies were found in literature searches which measured aspects of social emotional competence as an outcome. These six studies evaluate four intervention programmes: 1. Promoting Alternative THinking Strategies (PATHS) (Greenberg, Kusche, & Riggs, 2004), 2. Positive Youth Development Programme (Caplan, Jacoby, Weissberg, & Grady, 1988), 3. Head Start REDI, and 4. Social and Emotional Training (Kimber, 2001).

The PATHS curriculum consisted of six volumes of lessons, and a teacher's manual. There was a total of 131 lessons, but any particular lesson can last one to five or more sessions depending on the needs of the specific group of children. PATHS was designed to be used by classroom teachers in a flexible manner from preschool age children through to pupils aged around 11. A number of conceptual domains were targeted in PATHS, which included emotional intelligence, increased self-control over impulses and behaviour, use of empathy, improved relationship skills, enhanced self-esteem, use of analytic thinking, and mature interpersonal problem solving skills. Two studies of PATHS programmes found contradicting results; Greenberg, Kusche, Cook, and Quamma (l995) found that implementation of the PATHS curriculum led to significant improvements in vocabulary and fluency in discussing emotional experiences, management of emotions, and emotional understanding, whereas Kam, Greenberg, and Walls (2003) found no intervention effects on teacher ratings of social competence.

Unlike PATHS, which was an intervention that lasted at least one-year, The Positive Youth Development Programme was a 20-session curriculum, designed to promote young adolescents' personal and social competence. Specifically, the curriculum was composed of six units: (a) stress management, (b) self-esteem, (c)

problem-solving, (d) substances and health information, (e) assertiveness, and (f) social networks. The curriculum initially focused on general social competence promotion and then provided opportunities for pupils to apply their knowledge and skills to developmentally appropriate dilemmas concerning alcohol and drug use.

The programme was implemented by masters-level health educators in the intervention group, and was compared to a control group who continued to receive their regular science curriculum which included a series of lessons pertaining to the physical effects of drugs. Pupils in the intervention group improved in coping skills, teacher ratings of social emotional adjustment, and feelings of self-efficacy compared to the control group (Caplan et al., 1992).

In the Head Start REDI intervention the Preschool PATHS Curriculum (Domitrovich, Greenberg, Cortes, & Kusche, 1999) was used to promote children's social emotional skills. This curriculum targets four domains: (a) prosocial friendship skills, (b) emotional understanding and emotional expression skills, (c) self-control, and (d) problem-solving skills, including interpersonal negotiation and conflict resolution skills. The curriculum is divided into 33 lessons that are delivered by teachers during circle time. This intervention also targeted literacy skills and teachers received materials relevant to this.

A large-scale evaluation of this programme involving forty four classrooms (356 participants) was carried out by Bierman et al. (2008). No information was given on the number of Head Start Centres these classrooms came from, but centres were assigned to either intervention or control groups. Teachers implemented the intervention but received a high level of support from the programme developers (i.e. on average trainers spent three hours a week in each classroom and one hour with the head or depute of the centre). The participating classrooms used High/Scope or

Creative Curriculum as their base curriculum. Significant improvements favouring the intervention group were found for emotion recognition and competence responses.

The Social Emotional Training (SET) programme implemented in Sweden was also guided by detailed manuals for teachers, one for each grade, and also included a workbook for pupils. Altogether, the programme consisted of 399 concrete exercises, some of which were inspired by similar programmes in the USA (e.g. Greenberg, 1996; Elias et al., 1997). SET focused on the development of the following five functions: self-awareness, managing one's emotions, empathy, motivation and social competence.

Kimber, Sandell, and Bremberg (2008a) evaluated the effects on SET on junior (aged 10-11 years) and senior students (aged 13-14 years) after one-year of programme implementation. Kimber et al. (2008a) found that the SET programme resulted in significant improvements in senior pupils' ratings of self-esteem and self-image in the intervention when compared to the control group, but no significant intervention effects for the junior pupils. A further long-term follow-up after the programme had been in place for four years found a greater beneficial effect of SET on internalising rather than externalising problems when the intervention group were compared with the control group. This benefit only emerged after 3-4 years (Kimber, Sandell, & Bremberg, 2008b).

All universal intervention programmes measuring aspects of social emotional competence evidenced some positive intervention effect. The PATHS programme actually evidenced contradictory results with one study not finding significant universal intervention effects. However, the study by Kam et al. (2003) did not include any self-reported evaluation measures, only teacher-reported measures, which could explain the lack of significant intervention effects. Although the Head Start

REDI intervention (Bierman et al., 2008) found significant intervention effects on aspects of social emotional competence, there were also a number of other aspects of social emotional competence where there were no intervention effects (e.g. children's emotion identification, teacher and observer ratings of social emotional competence, and parents ratings of social competence). Similarly, the SET intervention (Kimber et al., 2008a) was only effective for senior pupils and required 3-4 years of intervention before effects were found on internalising difficulties. Although intervention programmes then have some evidence of significant effects, the evidence is not conclusive.

### 3.2.2. Coping skills intervention programmes.

The seven studies found in the literature review evaluated six intervention programmes. These were: 1. I CAN DO, 2. Zippy's Friends, 3. Best of Coping (Frydenberg & Brandon, 2002, 2007), 4. Stress management training (Fridrici & Lohaus, 2009), 5. Problem Solving for Life, and 6. Resourceful Adolescent Programme (Shochet et al., 2001).

The I CAN DO programme was a 13-session primary school curriculum designed to teach children general coping skills. Children learned to practice these skills in relation to five stressful life events/experiences that occur to a significant number of children: (a) parental separation or divorce, (b) loss of a loved one, (c) move to a new home or school, (d) spending significant amounts of time in situations without adult supervision (self-care), and (e) feeling "different" - ethnically, physically, and so forth. The 13 sessions were divided into six units. By memorising "I CAN DO," the children internalise each of the steps (Identify the problem; what Choices are available to deal with the problem; pay Attention to the information and consequences; Narrow the choices down to one; Do it; and Observe the outcome).

Children also learned the benefits of seeking social support to handle problems and using "feeling helpers" (i.e., strategies to make oneself feel better) for uncontrollable stressors (Short & Ayers, 1990).

In one study by Dubow, Schmidt, McBride, Edwards, and Merk (1993) four fourth-grade classrooms were assigned to either an immediate- or delayed-intervention groups. The intervention programme was delivered by clinical psychology graduate students. Results showed that the programme had no effect in improving knowledge and attitude towards negative events or in improving children's social support network. However, compared to children in the control group, the intervention group demonstrated a greater ability to generate a repertoire of effective solutions to stressful situations and greater self-efficacy in ability to implement effective solutions.

In contrast to the I CAN DO programme, Zippy's Friends is a preschool / early primary school intervention almost double the duration consisting of 24 sessions, and was facilitated by a teacher. The programme was built around a set of six illustrated stories that concern a group of young children and a pet insect called Zippy. The sessions were divided into six modules, each focusing on a particular theme (feelings, communication, making and breaking relationships, conflict resolution, coping with change and loss, and general coping). The programme did not tell children what to do, nor did it indicate what is right or wrong. Instead, it encouraged children to explore and think for themselves. Furthermore, rather than focusing on helping children to cope individually with their own problems, the programme emphasised the importance of talking to others, listening, as well as giving and receiving help.

An evaluation of Zippy's Friends was carried out in Lithuania and Denmark. It was found to be easily implemented by teachers with minimal support, and both

teachers and pupils had a high level of appreciation of its activities (Mishara & Ystgaard, 2006). The results of the study indicated that Zippy's Friends had improved children's abilities to cope with everyday adversities, increased some social skills and empathy and decreased behaviour problems. These improvements were found at post-intervention, there was no follow-up measurement in this study.

The aims of the Best of Coping (BoC) programme were to help adolescent pupils increase their repertoire of functional coping strategies and decrease their use of dysfunctional strategies. Pupils also learned to seek support from others. The programme consisted of an instructor and pupil manual and was comprised of ten one-hour weekly sessions. As with other programmes that will be discussed in Section 3.2.3.1, core elements of the programme included teaching cognitive-behavioural skills that enhanced optimistic thinking, effective communication, adaptive problem-solving, decision-making, goal setting and time management.

Only one evaluation of BoC programme was found that included a control group (Cotta, Frydenberg, & Poole, 2000). The programme was facilitated by both an educational psychologist and class teacher. Significant decreases in dysfunctional coping strategies for the intervention group were reported whereas the control group increased in dysfunctional coping strategies. No significant differences in functional coping or seeking support were found.

The stress management training intervention also targeted adolescents, and was delivered online, as well as face-to-face. Unlike the other intervention programmes there did not appear to be any available manual for this intervention. The programme consisted of a basic module focusing on problem-solving, which was expanded by additional programme modules related to cognitive reconstruction,

seeking for social support, and relaxation and time management. The programme was delivered in eight sessions.

Before and after the training all adolescents were questioned about their knowledge regarding stress and coping and their appraisal of stress-evoking situations. The participants self-assessed their perceived stress vulnerability, their coping behaviour and their stress symptoms. Fridrici and Lohaus (2009) found a significant increase of knowledge the intervention group, but not in the control group. However, there were no treatment effects on coping strategies or stress vulnerability.

The Problem Solving For Life (PSFL) programme involved eight sessions. There was a programme manual for teachers with prepared curriculum materials designed to teach life problem-solving skills, positive problem-solving orientation, and optimistic-thinking styles. The programme was similar to the BoC and stress management programmes in that it integrated two components, namely cognitive restructuring and problem-solving skills training.

Improvements in problem-solving skills were only found for a sub-group (i.e. those who were classified as 'high risk' on depression measures at pre-intervention) of participants at twelve months post-intervention (Spence, Sheffield, & Donovan, 2003). At four year follow-up PSFL pupils did not differ significantly from adolescents in the monitoring-control condition in terms of changes in problem solving from pre-intervention to four-year follow-up (Spence, Sheffield, & Donovan, 2005).

As with the Problem Solving for Life intervention, the final intervention programme, the Resourceful Adolescent Programme (RAP) was specifically designed for pupils aged between 12-16 years of age and included a detailed manual for facilitators. It was designed to be delivered to small groups of pupils and consisted of

11 sessions. The programme was intended to develop the following skills: recognition and affirmation of existing strengths and resources, promotion of self-management and self-regulation when confronted with stressful situations, employing of cognitive restructuring, creation of a personal problem-solving model, building and accessing psychological support networks, giving consideration to others' perspectives, and keeping and making the peace.

In a study by Harnett and Dadds (2004) 96 female pupils from one school received the RAP programme during class time, in class sizes ranging between ten and fourteen pupils. A similar number of pupils from another school acted as a comparison group. Eight trained facilitators, one school psychologist and seven teachers each implemented the RAP program with one class of students. All pupils were assessed at pre-, post-intervention, one-year follow-up and three-year follow-up. No significant effects were found from pre-intervention to three-year follow-up on either of the coping or social competence measures.

The evidence from universal intervention studies on coping is mixed. The two studies that did not achieve any intervention effect were also targeting depression, however, which may contribute to the lack of effects. Of the four intervention programmes solely targeting coping, only one did not find any intervention effect (i.e. Fridrici & Lohaus, 2009). There was evidence from two of the studies (Cotta et al., 2000; Dubow et al., 1993) that significant intervention effects were only found on aspects of coping skills (e.g. dysfunction strategies) but not others (e.g. functional strategies). None of the studies found that the intervention was effective in improving seeking social support coping skills.

### 3.2.3. Anxiety intervention programmes.

A basic distinction among intervention programmes was highlighted in Chapter 2 (Section 2.2.1). A universal approach is one in which all of the children in a given sample (e.g. school, classroom) are administered the intervention, irrespective of their symptoms. An indicated approach is one where the intervention is only administered to individuals or groups who are found to already report mild symptoms (e.g. of anxiety).

#### *3.2.3.1. A universal intervention programme.*

Only one universal programme targeting anxiety was found in literature searches. This is the Friends for Life programme (Barrett, 2004), a universal cognitive-behavioural intervention based upon the Coping Cat programme that was developed for children with established anxiety disorders (Kendall, 1994). It was a manualised, ten-session programme which utilised behavioural, physiological and cognitive strategies to teach children practical skills to identify their anxious thoughts; to learn how to relax; to identify unhelpful thoughts and replace them with helpful thoughts; and learn problem-solving techniques. Facilitators must complete essential one-day training before delivering the programme. There are two versions of the programme, a child version (for ages 7-11) and a youth version (for ages 12-16).

Significant post-intervention reductions in anxiety have been found following the child version of Friends for Life (Barrett & Turner, 2001; Lowry-Webster, Barrett, & Dadds, 2001), at 12 month follow-up (Barrett, Lock, & Farrell, 2005; Lock & Barrett, 2003) and at two year follow-up (Barrett, Farrell, Ollendick, & Dadds, 2006). Two studies involving both the child and youth version of the programme also found that children in the intervention groups demonstrated significant reduction in anxiety compared with those in the control group at post-intervention (Lock & Barrett, 2003),

and at 12 month follow-up (Barrett et al., 2005; Lock & Barrett, 2003). The study by Lock and Barrett (2003) also found that children in the lower grades (i.e. the child programme) benefited more than those in the older grades (i.e. the youth programme).

#### *3.2.3.2. Universal intervention programme targeting depression, that measures anxiety.*

The Penn Resiliency Programme (Gillham, Jaycox, Reivich, Seligman, & Silver, 2004) was an intervention programme targeting depression. There have been a number of published research studies evaluating the PRP as a universal intervention which have found mixed results (Cardemil, Reivich, Beevers, Seligman, & James 2002; Caremic, Reivich, & Seligman, 2007; Chaplin et al., 2006; Cutuli, 2004; Cutuli, Chaplin, Gillham, Reivich, & Seligman, 2006; Gillham et al., 2007; Pattison & Lynd-Stevenson, 2001; Quayle, Dzuirawiec, Roberts, Kane, & Esbworth, 2001). However only the study by Pattison and Lynd-Stevenson (2001) evaluated the programme's effects on an outcome relevant to the current study, i.e. anxiety.

As with Friends for Life, the Penn Resiliency Programme (PRP) was a manualised intervention programme, based on a cognitive behaviour therapy approach, and was similar in duration. Pattison and Lynd-Stevenson (2001) found no evidence that the PRP delivered as a universal intervention programme had an impact on the level of anxiety at the completion of the programme or at eight months later when follow-up assessment was conducted.

It appears then for anxiety, that only universal intervention programmes that have been designed to specifically target anxiety have been effective in reducing anxiety. The studies evaluating the Friends for Life programme have indicated that both teachers and psychologists are effective in delivering the intervention programme, and one study has gone further to suggest that teachers and psychologists

are equally effective facilitators of the intervention. Although all intervention studies of the Friends for Life programme have found significant intervention effects, it should be noted that there remain some inconsistencies in the findings. Specifically, not all studies have found significant intervention effects at post-intervention, for example, in Barrett et al.'s (2005) study, significant intervention effects on anxiety were only found at follow-up intervention.

As has been illustrated throughout Section 3.2, some universal intervention programmes have improved children's social emotional skills and coping, and reduced levels of anxiety. These intervention programmes have been implemented by teachers or mental health professionals and include both long-term programmes (e.g. over one year) and short-term interventions (e.g. eight sessions). Some studies also found that intervention effects were maintained at follow-up.

## 3.3. Common Methodological Problems

Although some universal intervention programmes just discussed have improved children's social emotional and coping skills, and reduced levels of anxiety, there are a number of common methodological problems that limit the findings of these studies. The remainder of this chapter will examine these methodological problems.

### 3.3.1. Attrition and missing data.

School-based interventions are prone to challenges in relation to attrition and missing data. Attrition and missing data are related issues which affect internal and external validity (Biglan & Ary, 1985; Hansen, Collins, Malotte, & Johnson, 1983). Attrition is particularly important when subjects who drop out of one condition are systematically different from subjects who drop out of other conditions since a truly effective programme may appear less so due to differential attrition and it may not be

possible to generalise study results if systematic differences exist in attrition rates (Biglan et al., 1991). However, the proportion of individuals missing from the groups is not the important issue, rather, the characteristics of those who have dropped out and those who remain in each of the groups must be assessed to determine the effect on internal and external validity (Biglan et al., 1987). In some studies (e.g. Spence et al., 2003; 2005) significant differences were found in patterns of missing data. Although school-based interventions are prone to difficulties with attrition and so studies can not be criticised heavily for difficulties with attrition, what is missing in many of the studies (e.g. Bierman et al., 2008; Dubow et al., 1993; Kam et al., 2003; Mishara & Ystgaard, 2006; Pattison & Lynd-Stevenson, 2001) is information regarding drop-out rates, attrition, or information regarding how missing data was dealt with. Without such information, caution must be taken when interpreting effects of interventions. A strength of the Friends for Life research is that patterns of missing data and attrition are analysed and reported, making the conclusions discussed earlier more robust.

### 3.3.2. Outcome measures.

The results of intervention evaluations can vary when different outcome measures are employed. The same intervention programme has been found to achieve significant effects on one measure, e.g. of anxiety such as the Spence Children's Anxiety Scale (Spence, 1998) but not on a second measure of anxiety such as the Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 1978), (e.g. Lowry-Webster et al., 2001; Lowry-Webster et al., 2003). However, other similar intervention studies have found significant intervention effects on both measures (e.g. Lock & Barrett, 2003). Similar results have been found on other studies measuring depression, e.g. Shochet et al. (2001) found significant intervention effects on

depression symptoms when measured by the Children's Depression Inventory (Kovacs, 1992) but not when measured by the Reynolds Adolescent Depression Scale (Reynolds, 1987). It is possible that some measures are more sensitive to changes than others, or that some measures have social desirability characteristics. Although it is not clear exactly what these discrepancies with different outcome measures mean, researchers should be aware of the potential for discrepancies among different measures of the same construct.

It is also important to note that in some intervention studies, there were problems with the outcome measured used in that there is little in the way of reported psychometric information (e.g. Greenberg et al., 1995), or that no information was published in the study of the psychometric properties of the measures used (e.g. Caplan et al., 1992). These issues raise questions regarding the validity of the findings of these studies. In other studies, teachers who were part of the implementation of the intervention provided outcome measures (e.g. Bierman et al., 2008; Caplan et al., 1992; Mishara & Ystgaard, 2006). This could have resulted in biases which need to be considered when interpreting the results.

A final issue relating to the outcome measures is that many of the studies relied solely on self-report outcome measures (e.g. Barrett et al., 2006; Barrett et al., 2005; Barrett & Turner, 2001; Cotta et al., 2000; Dubow et al., 1993; Fridrici & Lohaus, 2009; Harnett & Dadds, 2004; Kimber et al., 2008a,b; Lock & Barrett, 2003; Lowry-Webster et al., 2003; Pattison & Lynd-Stevenson, 1999). The issue of accuracy of children's self-report measures is documented in the literature and it is recommended that multiple sources be used to assess internalising disorders (Dadds et al., 1999; Kazdin, 1986). The inclusion of outcome measures such as parent or teacher reports would improve the quality of the evidence base for these interventions.

### 3.3.3. Fidelity to intervention.

The concept of fidelity to intervention, sometimes called adherence or integrity, is a determination of how well the programme is being implemented in comparison with the original programme design (i.e., is the programme being delivered as it was designed) (Mihalic, 2002). A high quality implementation of a poor programme may be more effective than a low quality implementation of an effective programme. Thus without knowing the extent to which the programme in an intervention study was implemented as it was designed to be implemented, uncertainty exists regarding the extent to which the intervention programme caused the outcomes. Fidelity is therefore an important variable to measure in any intervention study. Although many of the intervention studies did include some measure of fidelity to intervention (e.g. Barrett & Turner, 2001; Barrett et al., 2005; Barrett et al., 2006; Bierman et al., 2008; Gillham et al., 2007; Kam et al., 2003; Kimber et al., 2008a,b; Lock & Barrett, 2003; Lowry-Webster et al., 2001; Mishara & Ystgaard, 2006; Spence et al., 2003, 2005), some did not (e.g. Caplan et al., 1992; Dubow et al., 1993; Fridrici & Lohaus, 2009; Pattison & Lynd-Stevenson, 1999), limiting the conclusions that can be drawn from those studies that did not include fidelity measures.

### 3.3.4. Data analysis.

There are two common methodological problems throughout the literature in this field in relation to the data analysis. The first is related to the analysis of pre-existing differences between the groups. Many of the intervention studies did not provide evidence that any pre-existing differences between the groups at the start of the intervention were taken into consideration in analyses (e.g. Barrett et al., 2005; Barrett & Turner, 2001; Cotta et al., 2000; Fridrici & Lohaus, 2009; Kimber et al.,

2008a,b; Lock & Barrett, 2003; Lowry-Webster et al., 2001; Lowry-Webster et al., 2003; Mishara & Ystgaard, 2006). Failure to report any pre-existing differences between groups creates difficulties in drawing conclusions regarding whether any effects were due to the intervention programme, or in fact due to any differences that already existed between the groups.

The second methodological problem in data analysis is related to the level of randomisation. It is important to acknowledge that intervention studies conducted in 'real world' settings encounter difficulties with methodological rigour. The universal application of an intervention programme does not lend itself to random allocation of participants to intervention conditions. Pupils are nested within classes which are in turn nested within schools. Therefore, in universal intervention studies randomisation to condition is at the level of the class or the school and not at the level of the individual. This creates difficulties as there could be other extraneous variables (e.g. ethos, teaching, priorities) related to the class or the school, which could contribute to any intervention being more successful in one setting over another. As a first step in reducing these extraneous variables studies made attempts to recruit comparison schools matched on demographic variables and then allocated schools to intervention conditions (e.g. Barrett & Turner, 2001; Barrett et al., 2005; Barrett et al., 2006; Bierman et al., 2008; Greenberg et al., 1995; Harnett & Dadds, 2004; Lock & Barrett, 2003; Kam et al., 2003; Kimber et al., 2008a,b; Lowry-Webster et al., 2001; Lowry-Webster et al., 2003; Mishara & Ystgaard, 2006; Spence et al., 2003, 2005). However, variances between schools can be four times the variances between classes of the same school (Brown & Liao, 1999). If the statistical data analysis can not take into account the nested effects of class and school (e.g. due to insufficient sample size), a

way of minimising variances and possible confounding variables would therefore be to allocate classes to treatment conditions rather than schools (Brown & Liao, 1999).

### 3.3.5. Follow-up data collection.

In a review of intervention programmes, Adi et al. (2007) found studies that evaluated intervention effects at post-intervention were more likely to achieve significant findings than those which included a longer-term evaluation. Studies that included longer-term evaluations through the collection of follow-up data were less likely to achieve significant results, suggesting that intervention effects found at post-intervention may not always be maintained at follow-up measurement. While significant intervention effects at post-interventions are desirable, it is even more desirable to achieve longitudinal significant intervention effects.

The Friends for Life research evaluates its impact on long-term outcomes from one to three years (e.g. Barrett et al., 2005; Barrett et al., 2006; Lock & Barrett, 2003; Lowry-Webster et al., 2001). Similarly, other intervention programmes have been evaluated over long time periods, including: Social Emotional Training (Kimber et al., 2008b), Problem Solving for Life (Spence et al., 2003, 2005).

In contrast, for other intervention programmes, only immediately post-intervention data have been collected: Social Competence Training (Caplan et al., 1992), Stress Management Training (Fridrici & Lohaus, 2009), Zippy's Friends (Mishara & Ystgaard, 2006), Best of Coping (Cotta et al., 2000), and Head Start REDI (Bierman et al., 2008). Follow-up data would extend the knowledge base in this field and allow the longer-term effects of interventions to be considered. This is particularly relevant as effects on internalising symptoms may improve over time (Kimber et al., 2008b).

### 3.3.6. What is not reported.

In reviewing the evidence base for any intervention programme it is important to be cautious regarding what is not reported. Researchers and journals have a tendency to publish significant findings (Bourgeois, Murthy, & Mandl, 2010; Peters et al., 2010). The possibility exists that researchers, particularly when they are not independent from the programme, have carried out more studies evaluating the intervention programmes, but only those with significant intervention effects are published.

## 3.4. Implementation Factors

In addition to methodological problems limiting the conclusions of research in this area, the findings from universal intervention studies may also be limited by a variety of implementation factors. These include; facilitator, training and support, duration of intervention, group size, and participant age. These factors will be discussed next.

### 3.4.1. Facilitator, training and support, and sustainability of interventions.

Interventions delivered by a psychologist or mental health professional have achieved significant effects on coping skills (e.g. Dubow et al., 1993; Lock & Barrett, 2003) and anxiety (e.g. Barrett et al., 2006; Barrett et al., 2005; Lock & Barrett, 2003). A particular concern with universal school-based interventions is their sustainability and 'real world' application. Using a psychologist or mental health professional instead of teachers can increase the cost of implementing interventions, which will inevitably reduce the likelihood that the programme will be sustained and disseminated within the education sector. However, others suggest that compared to psychologists or mental health specialists, teachers may not have the background

skills and knowledge to apply to interventions, often cognitive behavioural interventions, effectively (Spence et al., 2005).

Two studies (Caplan et al, 1992; Cotta et al., 2000) have utilised both psychologists and teachers as joint facilitators. Both of these studies found significant intervention effects favouring the intervention group on aspects of coping skills, and Caplan et al. (1992) also found significant improvements teacher ratings of social and emotional adjustment. The collaborative implementation by a teacher and psychologist may contribute to the maintenance of long-term positive effects (Cotta et al., 2000). Inclusion of the psychologist may help address the concerns noted by Spence et al. (2005), and may also increase fidelity to the intervention programme for example, particularly over time given that degradation in implementation is a recurring problem (McCormick, Steckler, & McLeroy, 1995; Noell, Gilbertson, Ranier, & Freeland, 1997). However, it is argued here that the inclusion of the psychologist will contribute to the programmes being unsustainable in Scotland, and possibly other countries, due to the cost implications of including a psychologist. Therefore it is argued here that further research into the effectiveness of the programmes delivered only by teachers is vital in finding an effective intervention programme that is also sustainable.

A number of studies have evaluated the effect of the intervention programmes delivered by class teachers. These studies have found significant intervention effects for the intervention group compared to the control group on emotion recognition and competence in responses to situations (Bierman et al., 2008), anxiety (Barrett & Turner, 2001; Lock & Barrett, 2003; Lowry-Webster et al., 2001), coping (Mishara & Ystgaard, 2006) and self-esteem, self-image and mental health symptoms (Kimber et al, 2008a,b). In contrast, other studies have found no universal intervention effects

when delivered by teachers, e.g. on coping (Harnett & Dadds, 2004; Spence et al., 2003, 2005) or social competence (Harnett & Dadds, 2004; Kam et al., 2003). The intervention programmes that have not been effective when delivered by a teacher were all targeting depression, which may explain the lack of significant universal intervention effects on coping skills.

The level of support facilitators received during the implementation of the programme is another important factor to consider. A higher level of facilitator support from researchers or programme developers might also help address the issues raised by Spence et al. (2005) (i.e. that teachers may not have the background skills and knowledge to apply the intervention effectively). In addition, a high level of support might also result in increased fidelity to intervention, which can impact on the results achieved (Chambless & Hollon, 1998; Noell et al., 1997). In one intervention study there was a very high level of support given to the teachers (Bierman et al., 2008), where programme developers spent an average of three hours a week in the classroom and one hour a week with either the head or deputy head of the establishment during the implementation of the intervention. It is not known whether such a high level of support is necessary to achieve the significant effects found in Bierman et al.'s (2008) study. If a high level of support is required for teacher facilitators to effectively implement an intervention, as with the interventions facilitated by a psychologist or mental health professional, this will impact on the sustainability of the intervention.

However, other interventions have been implemented requiring minimal training of facilitators (e.g. one day) and ongoing support. The provision of supervision and support for group leaders has been identified as an important factor in differentiating effectiveness studies (Chambless & Hollon, 1998). Interventions

requiring minimal supervision and support from researchers or programme developers have achieved mixed findings, e.g. with significant effects found using the Friends for Life intervention programme (Barrett & Turner, 2001) and Zippy's Friends (Mishara & Ystgaard, 2006) but not with the Problem Solving for Life intervention programme (Spence et al., 2003, 2005). Although supervision and higher levels of support may result in increased teacher effectiveness in delivering universal interventions, such a level of supervision is also costly and difficult to implement in real world conditions, again impacting on the sustainability of interventions.

This balancing of effectiveness and sustainability of a universal intervention programme is an important issue, which has not been investigated in detail. Only one study has compared the effect of psychologists against teachers as facilitators of the intervention programme (Barret & Turner, 2001). No differences were found causing the authors to propose that teachers were equally effective as psychologists in delivering Friends for Life. However, in Barrett and Turner's (2001) study the same psychologist facilitated all the psychologist-led groups and so it could be argued that this study actually compared this particular psychologist with different teachers rather than psychologists per se. Furthermore, there was no follow-up evaluation and so it is not known if there continued to be no differences between the groups who received the intervention from a teacher compared with the psychologist. Further research is required comparing the effectiveness of teachers versus psychologists as facilitators in order to extend the literature on effective and sustainable universal intervention programmes.

### 3.4.2. Duration of intervention.

There are considerable differences in the duration of universal intervention programmes, with some (e.g. Head Start REDI, PATHS, SET) lasting for one year or

more, one lasting for around 22-24 sessions (e.g. Zippys Friends), others around 10-13 sessions (e.g. I CAN DO, BoC, RAP, FfL), while others contained only eight sessions (e.g. Stress Management Training, PSFL). It has already been demonstrated that the results among these studies are variable in terms of effectiveness. It may be that interventions did not find significant results because they were insufficient in duration, and not due to the content of the intervention itself. However, some relatively brief interventions have achieved significant effects (e.g, Barrett et al., 2006; Barrett et al., 2005; Barrett & Turner, 2001; Lock & Barrett, 2003; Lowry-Webster et al., 2001; Lowry-Webster et al., 2003), and so the variability in results could be due to a combination of both duration of intervention and another factor, for example the outcome measure. It may be that long term interventions are required to effect change in areas such as self-esteem, self-image (Kimber et al., 2008b). Thus, there are other implementation factors that might account for significant, or non-significant, intervention effects other than the intervention programme itself.

### 3.4.3. Group size.

Another implementation factor that could contribute to the effects found is the group size. Although the intervention programmes reviewed in this chapter are universal intervention programmes, in some studies programmes were delivered in smaller groups rather than to whole classes (e.g. Bierman et al., 2008; Harnett & Dadds, 2004; Pattison & Lynd-Stevenson, 1999). Smaller sized intervention groups may allow for more intensive teaching of the strategies and as a result could lead to increased likelihood of achieving significant effects compared with larger sized intervention groups. An effective intervention delivered to a small group may be less effective when delivered to a larger group. The finding that selective depression interventions tended to result in larger effects than universal interventions (Horowitz

& Garber, 2006) may actually be related to the size of the groups rather than approach to intervention, as selective interventions tend to be delivered to smaller groups than universal interventions. Any effects of the size of the intervention group on intervention findings are unknown.

#### 3.4.4. Participant age.

It is important also to note that intervention studies previously discussed vary with regards to the age of participants they are targeting. For example, Bierman et al. (2008) and Mishara and Ystgaard (2006) target participants under seven years of age, others target adolescents (e.g. Cotta et al., 2000; Harnett & Dadds, 2004; Spence et al., 2003, 2005) and others target primary aged children (e.g. Barrett et al., 2006; Barrett et al., 2005; Barrett & Turner, 2001; Lock & Barrett, 2003; Lowry-Webster et al., 2001; Lowry-Webster et al., 2003). This is an important factor to consider as Lock and Barrett (2003) found that Friends for Life is more effective with younger children (aged 9-10) than adolescents (Barrett et al., 2005). In contrast, Kimber et al. (2008a) found Social Emotional Training to be more effective with senior pupils compared with junior pupils. Although there are methodological concerns that limit the findings of these studies, possible developmental differences in intervention effects raise the possibility that similar developmental effects could be present in other interventions. Such findings may have important applications for the dissemination of intervention programmes. Further research would extend the knowledge base in this area to ensure that interventions are targeted at the optimum age of pupils and valuable resources are not wasted implementing interventions in least effective settings.

### 3.5. U.K. Research

None of the intervention programmes included in this review have been developed or evaluated in the U.K. There were two studies of the Friends for Life

programme in England but these were not included in the review (Stallard, et al., 2005; Stallard, Simpson, Anderson, Hibbert, & Osborn, 2007) as neither included a control group. Both of these studies suggested that the pupils who had received the intervention reduced in levels of anxiety and increased in self-esteem. However anxiety has also found to reduce significantly over time in control groups (e.g. Barrett & Turner, 2001) and therefore with a lack of control groups in these U.K. studies it can not be concluded that it was the intervention programme that caused reduction in anxiety, or an increase in self-esteem.

While the lack of U.K. evaluations is important, arguably of more importance is that none of the intervention programmes were developed by U.K. researchers, and therefore due to cultural differences the activities contained within the intervention programme may not be suitable or relevant to pupils in the U.K. The Friends for Life programme has been implemented in a number of local authorities in Scotland. Although there are no published evaluation studies, local evaluations of the intervention have concluded that supplementary material needed to be developed for further implementation to make the intervention programme more culturally relevant (Barr, Liddle, Barrett, & Macmillan, 2009; MacDonald & Rees, 2008).

This lack of U.K. studies and programmes raise questions regarding the generalisability of findings to U.K populations. As a result, it is argued here that there is a need for a U.K. universal intervention programme. Evaluation of a U.K. programme should take into account the methodological problems highlighted in this chapter, in order to extend the evidence base for universal intervention programmes targeting social emotional competence, coping skills and anxiety.

### 3.6. Summary

The previous chapter argued that universal intervention programmes targeting social emotional competence, coping and anxiety have the potential to promote mental wellbeing and reduce or prevent mental health problems. This chapter has provided a critical analysis of universal intervention programme studies that have targeted social emotional competence, coping and anxiety. It has been shown that some universal intervention programmes have improved children's levels of social emotional competence or coping, and others have reduced children's levels of anxiety.

Intervention programmes differ in regards to their duration, target age group, facilitators, and target domains, and for most of these intervention programmes, with the exception of Friends for Life, there are only one or two published evaluations of each programme. In addition, this chapter has also argued that there are a number of common methodological problems that limit the conclusions of the studies that were reviewed. As a result, it is difficult to arrive at any consensus in relation to the current state of the field of universal mental health intervention programmes. There were also no studies if intervention programmes that were either developed or implemented in the U.K. Currently, there is insufficient evidence in order to suggest that a particular intervention programme could be effective in promoting the mental health or reducing the mental health problems of Scottish school children.

There is a need then for a sustainable universal intervention programme to be developed, piloted and evaluated within the U.K. which takes into consideration methodological problems that have been highlighted in this chapter has been argued, and is the basis for the current research. The next chapter will consider the factors that are important in the development of effective intervention programmes and propose an intervention programme that may meet the need identified in this chapter.

# Chapter 4. The Development and Evaluation of a Universal Intervention Programme in the U.K.

The previous chapter has argued the need for effective intervention programmes targeting social emotional competence, coping and anxiety in the UK. This chapter will continue by presenting the evidence base relating to best practice in effective intervention programmes and propose that, Lessons for Living: Think well, do well (Waters et al., 2010), having been developed with these practices in mind, has the potential to be an effective intervention programme. The chapter will go on to present the aims and research questions of the current study, arguing that the current study will fill a gap in the current evidence base.

## 4.1. Best Practice in Effective Intervention Programmes

Although characteristics of effective intervention programmes have not yet been empirically identified, researchers have suggested a number of best practices in the area of mental health. Effective interventions are based on a clear theoretical model that explains why the intervention should impact the target problem (Morrissey et al., 1997; Nation et al., 2003; Olds, Robinson, Song, Little, & Hill, 1999). They should be culturally relevant to the target populations (Davis, 2002; Kirby, 1997; Olds et al., 1999; Weissberg, Kumpferm, & Seligman, 2003) and utilise interactive teaching methods to involve pupils and help them to personalise the information (Kirby, 1997; Tobler & Stratton, 1997), which often include hands-on experiences that focus on skills development (Morrissey et al., 1997; Nation et al., 2003). Well trained staff are a critical component of effective programmes. Staff chosen to implement the programme should believe in the intervention and receive sufficient training to deliver the programme (Kirby, 1997; Weissberg et al., 2003). Preventative interventions should be timed to occur prior to the onset or development of the

problem behaviour, usually focusing on antecedents or risk factors of the target problem (Weissberg et al., 2003). Programmes should be based on a clear model of behavioural change that has been effectively used in other types of programmes (Olds et al., 1999). They should include clear and detailed manuals to facilitate implementation and replication in other settings (Olds et al., 1999) and be integrated with other systems of care within a community, such as schools (Greenberg et al., 1999).

### 4.2. Lessons for Living: Think well, do well

LfL is an updated and restructured version of the previous programme Lessons for Living (Waters, 1998). It has been developed in line with this evidence base for best practice in intervention programmes. The theories underpinning the development of LfL, social and emotional competence (CASEL, 2003) and coping (Lazarus, 2000), are combined with Beck's (1976) model of cognitive behaviour therapy and integrated into a risk and promotive factors framework in order to promote mental health and reduce mental health problems. Coping skills have been suggested in Chapter 3 to be a promotive factor in promoting children's wellbeing (Lazarus, 2000) and reducing the risk of mental health problems, in particular anxiety (Brown, 1986; Donovan & Spence, 2000; Peterson et al., 1990; Spence, 2001) and therefore are the primary target of LfL. As LfL was developed in the U.K., it was developed to be culturally relevant to U.K. school children.

LfL involves a variety of interactive teaching methods, including whole class, group and individual tasks. Once children are taught a new 'tool' they are continually asked to reflect on how they might apply it to their own life. Each week children practise relaxation at least once, often twice, during the lesson. The programme has a detailed manual for facilitators to follow, which they receive at the training day. It

has been developed in line with the national curriculum in Scotland as a health and wellbeing education curricula, and so can be easily implemented in primary schools.

Similar intervention programmes (e.g. Friends for Life, BoC, PRP that were discussed in Chapter 3) also adopt a cognitive behaviour therapy approach, but these programmes tend to be modular, teaching strategies such as relaxation and problem-solving skills in separate lessons. In contrast LfL develops its main strands progressively from the first through to the eighth session, and the final two sessions focus on the application of these skills to the individual's life. The main strands that are developed through the programme are: physiological and relaxation, cognitive, and problem-solving. These strands have been included in other intervention programmes that have been found to be effective. In LfL children develop a 'toolbox' of coping strategies that they practise throughout the programme and learn to apply specific coping tools to controllable problems as well as coping tools for both controllable and uncontrollable problems.

As has just been illustrated, LfL has been developed in line with the evidence base for best practice in intervention programmes and the social emotional competence, coping and anxiety literature. However, its effectiveness in improving children's social emotional competence and coping skills, and reducing children's anxiety has not yet been evaluated.

### 4.3. Aims and Research Questions of the Current Study

The aim of the current study is to evaluate the effectiveness of LfL in promoting children's mental health and reducing mental health problems. Specifically, the research aimed to answer the following questions:

1. Is LfL effective in increasing children's emotional intelligence as a component of social emotional competence?

2. Is LfL effective in increasing children's coping skills?
3. Is LfL effective in reducing children's level of anxiety?
4. Is LfL as effective when delivered by a class teacher as a psychologist?

# Chapter 5. Pilot Study

The literature review identified the need for an intervention programme developed within the U.K. that promotes mental health and reduces mental health problems. A risk and promotive factors framework was suggested for interventions and research in this area, and it was argued that emotional intelligence as a component of social emotional competence and coping skills were promotive factors and anxiety a risk factor that can be targeted by mental health intervention programmes in schools. A number of methodological concerns were identified as being common among research, and it was argued that an evaluation of a U.K. intervention programme would extend the evidence base in this area.

"Lessons for Living" (Waters, 1998) had been used by many schools in South Lanarkshire, Scotland. Anecdotal evidence suggested that this had been a popular intervention in schools, with elements of the programme still being used, but that it was outdated and difficult for teachers to implement. As discussed in Section 4.2, Lessons for Living was updated and restructured by the author of this thesis and others. This new programme, Lessons for Living: Think well, do well (Waters et al., 2010) (LfL) required to be piloted in order to determine the appropriateness of the activities before delivering the intervention on a larger scale within the local authority. A pilot study was therefore conducted between April and June 2009.

The purposes of the pilot study were to determine:

1. Whether there was an indication of positive intervention effects to warrant the implementation of a larger study.
2. Intervention effect size in order to calculate the sample size required for full scale study.
3. Whether changes were required to the contents of the intervention programme.

4. The appropriateness of the evaluation materials.

## 5.1. Method

The pilot study utilised a 3 (group: psychologist-led intervention, teacher-led intervention, comparison) x 2 (time: pre and post) mixed design.

### 5.1.1. Participants

Two primary schools from South Lanarkshire local authority were invited to take part in the pilot study of LfL. The schools were comparable in socioeconomic status, as measured by Free School Meal entitlement (5.5% and 5.7%, South Lanarkshire Council, 2008). Both primary schools were from affluent suburbs that have lower deprivation levels than the average for the local authority (i.e. 15.8%, South Lanarkshire Council, 2008). Two primary six classes, one from each school, were randomly allocated to either being the 'psychologist-' or 'teacher-' led in the intervention group, and a primary 6/7 class from the same school as the psychologist-led class, served as a comparison group.

There were 31 participants in the psychologist intervention group (20 males and 11 females), 25 in the teacher intervention group (10 males and 14 females) and 14 in the comparison group (6 males and 8 females). The mean age for participants in the psychologist group was 10 years 6 months (*s.d.* = 2.59 months), 10 years 5 months in the teacher group (*s.d.* = 4.26 months) and 10 years 4 months in the comparison group (*s.d.* = 7.88 months).

### 5.1.2. Procedures

All participants were given a letter (see Appendix 2 for intervention group and Appendix 3 for comparison group) for their parents to provide permission for their children to take part in the research. For the intervention groups, the letter informed parents that should they not provide consent for their child to take part in the research,

their child would not be disadvantaged as s/he would still receive LfL as part of the Personal and Social Education (PSE) curriculum. Parents of participants in the comparison group were asked to consent to their children taking part in an evaluation of their PSE curriculum. All parents were informed that they could withdraw their children from the study at any time. Along with the consent letter, parents were also asked to complete and return the Spence Children's Anxiety Scale-Parents to their child's class teacher, if they consented to their child taking part. Parents were provided with an envelope, addressed to the researcher, to allow the questionnaires to be returned in a sealed envelope.

Participants completed all evaluation measures pre- and post-intervention. Class teachers were provided with written guidelines for issuing the evaluation measures to their class, which were completed during class time. Pre-measures were completed the week before the intervention started and post-evaluation measures were completed by the same process within a week of the intervention finishing.

Teachers were asked to provide each participant's attainment levels in reading, writing and maths on the 5-14 curriculum. Attainment levels on the 5-14 curriculum in Scotland are assessed on a scale rising from A to E. By the end of primary 6, most participants have achieved level C, with many achieving level D during primary 6. In addition, information regarding additional support needs of each participant was collected. Class teachers were asked to complete a class information sheet detailing whether participants had additional support needs, such as autism, attention deficit hyperactive disorder, general learning difficulty, specific learning difficulty (e.g. dyslexia, dyscalculia), social, emotional and behavioural difficulty, dyspraxia, language and communication difficulty, or any other known difficulties that were barriers to the participants' learning. In the psychologist-led group, two pupils had a

specific learning difficulty (e.g. dyslexia), one had a language and communication difficulty and two had a combination of additional support needs. No pupils in the teacher-led group were identified as having any additional support needs, and no information was given on the additional support needs of the comparison group. The purpose of gathering this information was to test for any differences between the intervention and comparison groups on these factors.

### 5.1.3. Intervention

Intervention groups were led by either a teacher or a psychologist and received the LfL programme. As discussed in Section 4.2, LfL aims to promote well-being in children and young people, help them become aware of their emotions and provide them with adaptive coping strategies for life. The main strands developed through the programme are: relaxation, cognitive, and problem-solving. The programme consisted of 10 weekly 60-90 minute sessions. The comparison group received its normal PSE curriculum. A group leader's folder described the activities in each session in detail, and children were provided with their own LfL folders that they worked through.

### 5.1.4. Measures

#### 5.1.4.1. Bar-On emotional quotient inventory: youth version short (EQi, YV: Bar-On & Parker, 2000).

Based on the Bar-On model of emotional intelligence, the EQi: YV is a self-report psychometric instrument designed to measure emotionally and socially intelligent behaviour in children and adolescents (7-18 years). It consists of 30 items that comprise a total EQ score. Each item is in a 4-point response format ranging from "not true of me" to "very true of me". Internal reliability reported in the technical manual (Bar-On & Parker, 2000) was satisfactory ($r$ = .84), as was test-

retest reliability ($r$ = .87). The EQi, YV demonstrates a satisfactory correlation with the adult scale ($r$ = .81) (Bar-On & Parker, 2000). The internal reliability for the sample in this pilot study was $r$ = .71. Scores on the EQi: YV would be expected to increase at post-intervention as a result of LfL.

#### 5.1.4.2. Coping strategy indicator (CSI: Amirkhan, 1990).

The CSI is an inventory consisting of 33 items. It was empirically and inductively derived and taps strategies most often revealed in factor analyses of coping in youth and in adults (avoidance, seeking support and problem-solving) (Amirkan, 1990; Brodzinsky, Elias, Steiger, Gill & Hitt, 1992; Compas, Malcarne & Fondacaro, 1988; Lazarus & Folkman, 1984). The CSI yields scores in three subscales: seeking social support (sss), problem solving (ps) and avoidance (a). Scores in the latter subscale should reduce after intervention, whereas scores in the seeking social support and problem-solving subscales should increase. Scores in all subscales range from 11-33.

Although it has been used with child populations, psychometric properties have not been tested in child populations. With adult samples it has been found to have good levels of internal consistency for all subscales ($r$ = .93 for sss, .89 for ps and .84 for a), good test-retest reliability ($r$ = .77 - .83 for ps, .8 - .86 for sss and .79 - .82 for a), as well as showing good convergent and discriminant validity (Amirkhan, 1990). The internal reliability for the present pilot study was $r$ = .85 for ps, $r$ = .83 for sss and $r$ = .70 for a.

#### 5.1.4.3. Spence children's anxiety scale (SCAS: Spence, 1998).

The SCAS is a 45 item child (8-12 years) self-report measure designed to evaluate symptoms relating to separation anxiety, social phobia, panic attack and agoraphobia, obsessive-compulsive disorder, fear of physical injury and generalised

anxiety. Children are asked to rate, on a four point scale from 'never to 'always', the frequency of which they experience each of the symptoms. Scores in the SCAS range from 0-114, and would be expected to decrease post-intervention as a result of the LfL.

This measure is able to reliably discriminate between anxious and non-anxious children. The questionnaire is normed on an Australian sample. The SCAS has been found to have high internal consistency ($r$ =.92), high split half reliability ($r$ =.90), adequate test-retest reliability ($r$ =.63), as well as showing good convergent and discriminant validity (Spence, Barrett & Turner, 2003). Internal reliability in the pilot study sample similarly was $r$ = .90.

#### 5.1.4.4. Spence children's anxiety scale – parents (SCAS-P: Nauta et al., 2004).

The SCAS-P represents a relatively reliable and valid instrument for the assessment of anxiety among children and adolescents, especially when combined with the child version. It can also be used to evaluate the effects of interventions. The SCAS-P is a parent completed measure derived from the SCAS. Internal consistency was reported in the manual as satisfactory in both the clinical and normal comparison group ($r$ = .83 – .92). The internal reliability for the present sample in this pilot study was good, $r$ = .90. The scale is able to discriminate between normal comparisons and anxiety disordered children and shows good convergent validity with another parent measure (CBCL-internalizing) and with the SCAS. Scores on the SCAS-P also range from 0-114 and would be expected to decrease at post-intervention as a result of LfL.

#### 5.1.4.5. Application of skills taught.

In order to determine if participants were able to apply the skills they learned from LfL beyond each individual lesson, participants in the intervention condition

were provided with a diary. This diary asked participants to record some feelings, thoughts and behaviours they experienced over the past week, how they knew they felt or thought like that and anything they did to change their thoughts or behaviours. Participants were given 5-10 minutes once a week to complete this outside the intervention sessions.

### 5.2. Results and Discussion

Using PASW, preliminary analyses were carried out to screen the data for outliers and violations of the assumptions of ANCOVA. Data screening revealed a number of participants who did not complete all the questionnaires or who completed the questionnaires incorrectly. For those who completed questionnaires incorrectly, where only one value was missing from any subscale on the questionnaire, the mean score for the subscale was calculated and entered. Where more than one value was missing from any subscale, the value was entered as missing data and was by PASW default, excluded from analysis. Participants who did not complete both the pre- and post- questionnaire were not included in the analysis and treated as missing data. Rates of missing data are displayed in Table 5:1.

A higher level of missing data was found in the comparison group for the coping skills indicator and in the teacher group for the emotional intelligence questionnaire. This was almost always due to participants failing to complete the last page of the questionnaire. As the comparison group only contained fourteen participants, the level of missing data in the comparison group was concerning and therefore any results on the coping skills measure should be interpreted with caution.

Table 5:1

*Rates of Missing Data on Outcome Measures Across Groups*

| | SCAS | SCAS-P | EQi | CSI (a) | CSI (ps) | CSI (sss) |
|---|---|---|---|---|---|---|
| Psychologist led | 6.45% (n = 2) | 74.19% (n = 23) | 6.45% (n = 2) | 3.23% (n = 1) | 3.23% (n = 1) | 6.45% (n = 2) |
| Teacher led | 25% (n = 6) | 62.5% (n = 15) | 50% (n = 12) | 16.67% (n = 4) | 16.67% (n = 4) | 16.67% (n = 4) |
| Comparison | 21.43% (n = 3) | 100% (n = 14) | 0% (n = 0) | 64.29% (n = 9) | 64.29% (n = 9) | 64.29% (n = 9) |

Key:

SCAS: Spence children's anxiety scale

SCAS – P: Spence children's anxiety scale, parents' version

EQi: Bar-On emotional quotient inventory

CSI (a): Coping strategy indicator (avoidance)

CSI (ps): Coping strategy indicator (problem solving)

CSI (sss): Coping strategy indicator (seeking social support)

Due to the high rate of missing data on the SCAS-P, as illustrated in Table 5:1, statistical analyses were not carried out for this dependent variable. Checks on the normality of the distribution were carried out on the remaining five dependent variables. As well as visually checking for normal distributions using graphs, z-scores were calculated from values of skewness and kurtosis and the Kolmogrov-Smirnov test was used. No violations of the normality assumptions of ANCOVA were found.

Preliminary analyses were also conducted to ensure that the groups did not differ significantly from each other at intervention start. No significant differences

were found between the groups in gender, $\chi^2$ (2) = 3.44, $p$ = .179, or in age, $F$(2,64) = .88, $p$ = .419. As stated in Section 5.3, five pupils in the psychologist-led intervention group had an additional support need, and there were no pupils with an additional support need in the teacher-led intervention group, this difference was not significant, $\chi^2$ (3) = 4.26, $p$ = .235. No data were obtained on the additional support needs or attainment levels of the comparison group. Table 5:2 shows the frequency of participants in each group who had achieved the expected national standard, i.e. had achieved level C. More participants in the teacher-led groups had met the national standard in attainments in maths and writing than those in the psychologist-led group, and these differences were significant (maths $\chi^2$ (1) = 14.26, $p$ < .001, and writing $\chi^2$ (1) = 5.21, $p$ = .022). Pupils in the teacher-led group were also more likely to have met the national standard in attainments in reading, this difference was almost significant, $\chi^2$ (1) = 3.34, $p$ = .068. This possible threat to internal validity will be considered when interpreting results.

Table 5:2

*Frequency of Participants Meeting National Standard in Attainments*

| | Reading | | Maths | | Writing | |
|---|---|---|---|---|---|---|
| | Met | Not met | Met | Not met | Met | Not met |
| Psychologist-led group | 27 | 4 | 15 | 16 | 25 | 6 |
| Teacher-led group | 24 | 0 | 23 | 1 | 24 | 0 |

One-way ANOVAs were also carried out to test for differences between the groups on the five dependent variables at pre-intervention. No significant differences were found between the groups on emotional intelligence, $F$ (2,66) = 1.20, $p$ = .309, $r$

= .27, avoidance, $F$ (2,62) = 1.90, $p$ = .159, $r$ = .24, seeking social support, $F$ (2,62) = 1.43, $p$ = .248, $r$ = .21, or on problem solving $F$ (2,63) = 1.18, $p$ = .314, $r$ = .19, at intervention start. The difference between the groups on anxiety at pre-intervention bordered on significance, $F$ (2,64) = 2.52, $p$ = .088, $r$ = .27.

### 5.2.1. Was there an indication of positive intervention effect that suggested a larger study was worth pursuing?

Table 5:3 shows the mean scores on each of the dependent variables at pre- and post-intervention across each group. As demonstrated in Table 5:3 anxiety scores reduced as predicted from pre-post intervention and changes to mean seeking social support coping scores were also in the predicted direction, that is, both intervention groups increased whereas the comparison group decreased.

#### 5.2.1.1. *Emotional intelligence.*

Pre-intervention emotional intelligence score was used as a covariate. There was a significant effect of group on post-intervention score after controlling for the effect of the pre- score, $F$(2,51) = 4.74, $p$ = .013. Planned contrasts revealed that there were no significant differences between the psychologist and comparison group, $t$(51) = .84, $p$ = .407, $r$ = .11, a small effect size (Cohen, 1988, 1992). Differences between the teacher and comparison groups, at post-intervention just reached significance, favouring the comparison group, $t$(51) = -2.03, $p$ = .048, $r$ = .27, a small-medium effect. Pupils in the teacher group decreased in emotional intelligence scores from pre- to post-intervention, whereas pupils in the psychologist group increased, this difference was significant, $t$(51) = -3.07, $p$ = .003, $r$ = .40, a medium-large effect.

Table 5:3

*Pre and Post Means and Standard Deviations of Dependent Variables Across Groups*

| | Teacher-led group | | Psychologist-led group | | Comparison group | |
|---|---|---|---|---|---|---|
| | Pre M (SD) | Post M (SD) | Pre M (SD) | Post M (SD) | Pre M (SD) | Post M (SD) |
| SCAS | 33.51 (15.7) | 19.36 (8.99) | 24.21 (15.9) | 18.98 (13.6) | 31.64 (15.7) | 29.8 (12.82) |
| EQi | 65.28 (8.42) | 60.33 (5.14) | 62.3 (7.82) | 64 (7.16) | 63.03 (6.42) | 63.53 (6.27) |
| CSI (a) | 18.09 (4.16) | 17.7 (3.74) | 18.87 (3.91) | 18.27 (4.86) | 20.82 (2.67) | 18.4 (5.13) |
| CSI (sss) | 20.5 (5.75) | 22.1 (4.96) | 19.24 (5) | 20.36 (5.59) | 22.3 (4.63) | 20.6 (6.19) |
| CSI (ps) | 20.41 (5.53) | 19.96 (3.49) | 19 (5.35) | 19.23 (6.26) | 21.72 (4.88) | 18.4 (5.98) |

Key:

SCAS: Spence children's anxiety scale

EQi: Bar-On emotional quotient inventory

CSI (a): Coping strategy indicator (avoidance)

CSI (ps): Coping strategy indicator (problem solving)

CSI (sss): Coping strategy indicator (seeking social support)

#### 5.2.1.2. *Coping skills.*

From Table 5:3 it looked as though there was an increase in seeking social support coping skills and reductions in avoidance coping skills for the intervention groups compared to the comparison group, but ANCOVA controlling for the effect of pre-score showed that this difference was not significant, $F(2,50) = .26$, $p = .773$ for

avoidance, and $F(2,50) = .57$, $p = .57$ for seeking social support. There was also no significant effect of group on problem-solving coping skills, $F(2,51) = .20$, $p = .821$.

#### 5.2.1.3. *Anxiety.*

Pre-intervention anxiety score was used as a covariate. There was a significant effect of group on post-intervention anxiety score after controlling for the effect of the pre- score, $F(2,54) = 3.69$, $p = .031$. Planned contrasts revealed that post-intervention anxiety scores were significantly lower for pupils in the teacher group compared with the comparison group, $t(54) = -2.64$, $p = .011$, $r = .33$, a medium effect. There were no significant differences between the psychologist and comparison groups, $t(54) = -1.24$, $p = .222$, $r = .16$, a small effect, or between the psychologist and teacher groups, $t(54) = -1.76$, $p = .084$, $r = .23$, a small-medium effect.

#### *5.2.1.4. Discussion.*

The pilot study then found some indications of significant intervention effects. Participants in the teacher-led group had significantly lower levels of anxiety at post-intervention than comparison group participants. Changes in the mean anxiety and seeking social support scores were in the predicted direction for both the teacher- and psychologist-led intervention groups.

There are a number of considerations which need to be taken into account when interpreting the results of the pilot study. The small sample size is likely to have resulted in insufficient power to detect significant effects across variables, and a larger sample size with sufficient power (see Section 5.6.2) is required to detect significant effects.

While the results suggest that the intervention was more effective in the teacher- than the psychologist-led group for anxiety, pupils in the teacher group were found to have been more likely to have achieved the national attainment levels in

writing, maths and reading than those in the psychologist group. This was identified as a potential threat to internal validity in Section 5.6.1, and thus may contribute to the results found. The differences between the groups on attainments may indicate important differences between the groups at intervention-start that could moderate the effectiveness of an intervention.

Although pre- scores were entered as covariates, the possibility remains that there were other extraneous variables that could impact upon the results achieved (Leary, 2001). Collecting information on participant attainment levels, additional support needs and matching schools according to socioeconomic status was an attempt to minimise some threats to internal validity that could arise from pre-existing differences between the groups. Collecting this information allowed for differences between the groups to be tested statistically, and so judgements can be made regarding how matched the groups are. In the pilot study this information was completed only by the teachers for the two intervention groups and not by the comparison teacher, and so it is possible that there were differences between the comparison group when compared with the teacher and psychologist groups that may account for the results found.

It is important to note that no measures of participant attendance at the lessons were taken and there was also no measure of facilitator fidelity to the programme manual. Measuring fidelity to the programme manual helps ensure that any conclusions drawn from the results are accurate, i.e. any effects are due to the programme and not due to specific adaptations to the programme that individual facilitators may make. This increases the generalisability of the results, as well as validity, and therefore is an important variable to be measured (Barrett et al., 2006; Catalano et al., 2003; Spence et al., 2003; Spence & Shortt, 2007). As with facilitator

fidelity, participant attendance at lessons is also a confounding variable. Both of these confounding variables will therefore be measured in the main study.

Missing data were higher in the comparison group than in the intervention group. There are a number of factors which may have contributed to this. The evaluation measures were administered to participants by the class teachers for each of the classes involved. The researcher met with the class teacher of the two intervention classes but did not have any direct contact with the class teacher of the comparison class. As a result, the teacher of the comparison class only received written instructions for the administration of the questionnaires whereas the teachers for the psychologist- and teacher-led classes received both written and verbal instructions. This may have impacted upon motivation and the priority attached to completing the measures. The class teacher may not have understood the importance of her class's involvement, and as the class were not receiving anything 'extra', her motivation to ensure that all measures were completed by all participants whose parents consented was likely lower than the teachers in the intervention group. In addition, the higher level of missing data in the comparison class due to participants not completing both sides of some questionnaires could be due to the comparison teacher not following the instructions for questionnaire administration, i.e. not reading each question to the class. As a result of this, the procedure for the main study was changed to ensure that the researcher met with all class teachers to discuss the study, and the instructions for completing the measures.

The timing of the study did not assist with the completion of evaluation measures, requiring post-measures to be completed during the last week of the summer term. The timing likely contributed to the missing data rates as the final week is usually a less structured week, often with school assemblies, more extra

curricular activities and outings, which result in participants being out of class more often. Anecdotal evidence also suggests that participant attendance is also often lower during this last week. These timing issues were addressed in the main study.

As noted previously, the comparison group sample size was smaller than the two intervention groups. While this was not problematic in the pilot study due to homogeneity of variances being equal (Mycroft, Mitchell & Kay, 2002), in order to avoid any similar problems in the main study, equal numbers of classes will be recruited for each group in the main study.

### 5.2.2. Intervention effect and sample size required for main study.

Due to the unequal sample sizes between the groups, omega squared could not be used as a measure of effect size (Field, 2005). Person correlations were therefore calculated and reported as measures of effect size, using the specific contrasts from ANCOVAs calculated in Section 5.2.1.

G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) was used to calculate the required sample size for the main study, based on the effect sizes found from the pilot. As the effect sizes varied from .013 to .40, the required sample size was calculated based on a small effect size, 0.1. G*Power calculated a required sample size of 261 participants for a 3 (group: psychologist-led intervention, teacher-led intervention and comparison) x 3 (time: pre, post and follow-up) design, with an effect size of 0.1 and power of 0.9. As it was expected that the study would experience problems with attrition, and attrition rates in similar studies vary from 2-20%, the sample size identified to be recruited for the main study was approximately 313 participants.

### 5.2.3. Are changes to the intervention programme required?

During the pilot study the researcher maintained ongoing discussions regarding programme implementation with the teacher who was delivering the intervention.

After the intervention was completed it appeared to the researcher that there were three main problems with the intervention programme that needed to be addressed in the main study.

1. Programme manual could be better presented. The inclusion of information regarding underlying theory along with the class activities made it impractical for the facilitator who was delivering the intervention to use as a guide during the lessons. For example in the session that focused on breathing styles, as well as classroom activities, the manual also contained background information that explained the physiology of different breathing styles (i.e. chest breathing and abdominal stomach breathing). It was decided that for the main study this information should be removed and presented separately in an additional chapter in the manual that explained the underlying theory. This ensured that each session within the manual contained only the information that was required to allow the facilitator to deliver that session's activities to the class.
2. The pilot intervention programme contained rather many coping techniques, possibly at the expense of allowing participants to learn and practise the techniques taught in greater detail. A number of techniques were subsequently removed from the draft programme for the main study, and any activity that was related to the teaching of a deleted technique was removed. The techniques that were removed were those that were found to be most difficult for pupils to understand and which were least enjoyable for pupils. These were: types of negative thinking patterns, using a trigger, and passive, aggressive and assertive response styles. Visualisation techniques that were removed included the safe room, the safe place (problem solving version) and

the empty chair technique. The removal of all of these techniques allowed potential for a greater focus on thoughts, feelings and behaviours, including more practise on identifying and changing less helpful thoughts into more helpful thoughts, as well as allowing participants more opportunities to experience and practice the relaxation and visualisation techniques that remained in the programme (i.e. safe box, safe place, progressive muscle relaxation, centring and abdominal breathing).

3. Lack of clarity around the application of the coping tools. While participants were taught a number of ways to cope with problems the pilot programme may not have sufficiently recognised that participants often experienced problems or worries that they were not in control of and could not influence the outcome (e.g. separated parents, chronic illness of parents, death of a family member). Therefore the tools provided in the manual for coping were not necessarily suitable for all types of problems. The programme was revised to help participants differentiate between problems that they were not in control of versus those that they were in control of or those that they could influence the outcome (e.g. arguments with friends, worrying about a class test). Participants were then taught that when they were not in control of the problem, relaxation and visualisation techniques could be helpful in coping, and 'cognitive' tools such as changing less helpful thoughts into more helpful thoughts could also be helpful coping tools. For problems or worries that participants were in control of, they were taught that all the same techniques could be used, but that they could also use more active problem-solving tools. This revision of the programme is consistent with research on coping strategies suggesting that problem-focused coping is more adaptive for

controllable circumstances, but that emotion-focused is more appropriate for uncontrollable circumstances in which people cannot enact change on the environment, only within themselves (see Section 2.5.). Effective coping is therefore likely to be characterised by flexibility and change (Compas, 1987), thus changes were required to the programme that addressed this directly with participants.

### 5.2.4. Are changes to the evaluation materials required?

A number of problems emerged regarding the evaluation materials in the pilot study.

1. Participant diaries were not found to be an appropriate measure of the application of skills taught, as the majority of participants did not complete them. Pressures and demands of the school curriculum may have contributed to the low rate of completion of the diaries, as well as the number of evaluation measures that were to be completed in class time for this study. Additionally, when those diaries that had been completed were analysed, they were found not to contain information that measured the application of skills taught. The concept of the diary and the questions that were asked within it may have been too complex for participants aged 9-10 years. For these reasons it was decided not to include the participant diaries in the evaluation measures in the main study, but instead to include an evaluation form (i.e. treatment acceptability measure) that would be completed as part of the intervention programme during the final session. Treatment acceptability refers to judgement about treatment procedures by non-professionals, including participants. Treatments that are viewed as more acceptable are more likely to be sought, initiated and adhered to than those that are not

acceptable by participants (Kazdin, 1980), and can affect intervention usage and outcomes (Cross-Calvert & Johnston, 1990; Tarnowski & Simonian, 1992) and therefore an important variable to measure.

2. No significant positive intervention effects were found for emotional intelligence using the Bar-On EQi. The development of and theory underpinning LfL is arguably not as strongly related to emotional intelligence, but more aligned with social emotional competence and therefore the intervention may not be specific enough to expect changes on an emotional intelligence scale. However, as the development of LfL was so closely related to the Health and Wellbeing outcomes and experiences in A Curriculum for Excellence (Scottish Executive, 2004a), it was considered appropriate that some measure of emotional intelligence was included in the evaluation, particularly as a component of social and emotional competence. For these reasons, the Bar-On EQi was replaced with an emotional literacy measure.
3. Finally, it is important to consider whether the act of taking part in the study could contribute to the intervention results. Participants may change their behaviour due to the attention they receive from researchers rather than due to manipulation of any independent variable. This is referred to as the "Hawthorne effect", and defined as the phenomenon of altered behaviour or performance resulting from awareness of being a part of a research study (Campbell, Maxey, & Watson, 1994). While there is some controversy regarding the existence of the Hawthorne effect (e.g. Jones, 1992), it was deemed worthwhile to consider any possible Hawthorne effect in the main study. The outcome measure spelling was included in the main study because,

unlike measures of emotional literacy, coping and anxiety, it was predicted that this would not be influenced by the intervention.

### 5.3. Summary

The pilot study indicated some positive effects on anxiety and seeking social support coping skills that suggested it would be worth investigating the outcomes of delivering the intervention on a larger scale. A number of methodological changes for the main study were identified with the intention of reducing missing data, and pupil diaries were found not to be an appropriate measure of application of skills taught. Effect sizes obtained in the pilot study were used to calculate the sample size required to ensure the main study was sufficiently powered. As a result of the pilot study, a number of issues were identified that would be addressed in the main study.

# Chapter 6. Main Study

## 6.1. Research Aims

The aim of the study was to evaluate a U.K. universal intervention programme, LfL, that targets emotional literacy, coping skills and anxiety. A pilot study was conducted which found evidence of positive intervention effects that suggested a larger study was worth pursuing. The required sample size in order to ensure that the main study was sufficiently powered was calculated from the effect sizes of the pilot study (see Section 5.6.2). In addition, a number of issues were identified from the pilot study that needed to be addressed in the main study:

1. Changes to the methodological procedures (see Sections 5.2 and 6.3.2).
2. Changes to the programme manual (see Section 5.2.3).
3. Changes to the evaluation materials (see Section 5.2.4).

Chapter 3 reviewed universal intervention programmes that targeted social emotional competence, coping and anxiety. There were a number of studies which resulted in improved levels of social emotional competence and coping skills and reduced anxiety as a result of the intervention programme, and in some of these studies intervention effects were maintained at long-term follow-up. However, common methodological problems among studies in this area limited the conclusions that could be made and this study attempted to address these.

## 6.2. Research Hypotheses and Questions

It was hypothesised that:

1. Children's levels of emotional literacy would increase following LfL intervention compared with comparison group participants.
2. Children's coping skills would improve following LfL intervention compared with the comparison group. Specifically, compared with the

comparison group, intervention participants' scores on avoidance would decrease and scores on seeking social support and problem-solving would increase.

3. Children's levels of anxiety (self- and parent-reported) would reduce following LfL intervention, compared with the comparison group.
4. As LfL is an intervention targeting mental health and not attainments, it was hypothesised that there would be no positive intervention effect on spelling.

Sustainability, as well as effectiveness, was also identified in Chapter 3 as important in universal intervention programmes, and it was argued that interventions may be more sustainable if they can be implemented effectively by class teachers. There was preliminary evidence to suggest that some interventions were effective when delivered by a class teacher and class teachers were equally effective facilitators as psychologists, but this required further research. The effectiveness of teachers compared with psychologists was a further research question of the current study. In addition, it was also argued in Chapter 3 that intervention effects that are maintained at longer-term follow-up than post-intervention were desirable. Therefore, the maintenance of intervention effects at follow-up was also an additional research question of the study.

## 6.3. Method

Changes were made to "Lessons for Living: Think well, do well" as outlined in Chapter 5. Thus, the programme in the main study was different from the programme used in the pilot study. The main study utilised a 3 (group: psychologist-led intervention, teacher-led intervention and comparison) x 3 (time: pre-intervention, post-interventions and six month follow-up) mixed design.

### 6.3.1. Participants

All 124 primary schools from South Lanarkshire Council were invited to take part in this evaluation study of LfL. Forty seven primary schools responded that they would be willing to take part. Schools were excluded from taking part if they were unable to allow a teacher to attend the one-day training event and if they only had one primary six (or one composite primary 5/6 or 6/7) class available for the study. The remaining schools were then grouped according to the socioeconomic status of their catchment area as determined by Free School Meal Entitlement (FSME) and their size. In order to ensure that the sample size was sufficient as determined by the pilot study (i.e. 313 participants), it was estimated that 18 classes would be required with class sizes ranging from around 18 to 33. A group of nine schools matched by FSME status and by numbers of pupils on the school roll, were therefore selected to take part in the study. All schools had more than 200 participants in their total population and the mean FSME was 6.9% (*s.d.* = 3.5). Participating schools were all from reasonably affluent suburbs that had lower deprivation levels than the average for the local authority (15.8%, South Lanarkshire Council, 2008).

Each primary school had at least two classes taking part in the study, with two schools having three classes. Classes were randomly allocated to either the intervention or comparison group, with each school having both an intervention and comparison class. The nine intervention classes were then randomly allocated to either being psychologist-led or teacher-led. Three psychologists delivered the intervention to five classes, and four class teachers delivered the intervention to their own classes. There were also nine comparison class groups.

Consents were not provided for five participants in the psychologist-led group, 13 in the teacher-led group and 22 participants in the comparison group. These pupils

were therefore not included in the study, although participants in the intervention groups continued to receive the intervention programme.

There were 110 participants in the psychologist-led intervention group, 86 participants in the teacher-led intervention group, and 149 participants in the comparison group. Table 6:1 provides an overview of the characteristics of the participants involved in this study. The low numbers of pupils in the ethnicity, home status and trauma categories did not warrant their use as independent variables.

Table 6:1

*Characteristics of Participants Involved in the Study.*

| | | Psychologist-led group | Teacher-led group | Comparison group |
|---|---|---|---|---|
| Gender | Male | 55% | 61.6% | 48.3% |
| | Female | 44.5% | 38.4% | 51.7% |
| Age | | 10 year 2 month (*s.d.* = 4.64 months) | 9 years 10 months (*s.d.* = 5.31 months) | 10 years 3 months (*s.d.* = 7.06 months) |
| Ethnicity | British white | 97.8% | 100% | 98.9% |
| | British Asian | 1.3% | 0% | 1.1% |
| Home status | Single parent | 21.2% | 18% | 16.2% |
| | Dual parent | 78.8% | 82% | 83.8% |
| Experienced trauma | Yes | 22.1% | 16% | 24.2% |
| | No | 77.9% | 84% | 75.8% |

### 6.3.2. Procedures

Procedures were followed as per the pilot study (see Section 5.1.2), with the addition of the following. A one-day training course was provided for all teachers and psychologists in the intervention groups. This training day provided an overview of the cognitive-behaviour theory that underpinned the programme, provided an overview of the course contents, and allowed facilitators to experience some of the activities that were in the programme, including all of the relaxation and coping skills techniques.

The researcher met with class teachers of all classes involved in the study and provided information regarding the study and instructions for completing the evaluation measures with their class. All teachers were informed that each item on the questionnaires was to be read aloud to participants as they completed the questionnaires. Post measures were completed within three weeks of the intervention finishing and follow-up measures were completed six months after the intervention finishing. All measures were completed at pre- and post- intervention, however only the CSI, SCAS and SCAS-P were completed at six month follow-up. This was due to feedback from class teachers and head teachers that the questionnaires used too much class time so in order to maximise the follow-up data collected the number of evaluation measures that were completed in class were subsequently reduced at follow-up.

### 6.3.3. Intervention

Participants in the two intervention groups (i.e. psychologist-led and teacher-led) worked through the LfL manual (Waters et al., 2010), that had been adapted from the pilot study. Details of the content of the programme can be found in Appendix 4. Programme aims and programme duration remained the same as for the pilot. For

participants in the intervention groups LfL replaced their normal PSE curriculum. As part of the intervention programme children were provided with their own LfL workbooks that they worked through. Participants in the comparison group continued to receive their normal PSE curriculum.

### 6.3.4. Measures

#### 6.3.4.1. Emotional literacy participant checklist (EL: Faupel, 2003).

As discussed in Section 5.2.4, the emotional intelligence measure used in the pilot study was changed to the Emotional Literacy Participant Checklist. This is a 25 item child (7-11 years) self-report measure designed to measure each of five proposed underlying dimensions of emotional literacy (i.e. self-awareness, self-regulation, motivation, empathy, social skills) identified by Goleman (1996), and which are similar to the key social emotional competences identified in Chapter 2 (Section 2.4.1).

The checklist was developed from a sample of 732 participants in Southampton, England and provides a total emotional literacy score. Cronbach's Alpha for the total emotional literacy score in this Southampton sample was acceptable, $r = .76$. No measures of test-retest reliability or validity were provided for in the manual. The internal reliability for the sample in this main study was acceptable, $r = .76$.

#### 6.3.4.2. Coping strategy indicator (CSI: Amirkhan, 1990).

The CSI is an inventory consisting of 33 items. It was empirically and inductively derived and taps strategies most often revealed in factor analyses of coping in youth and in adults (avoidance, seeking support and problem-solving) (Amirkan, 1990; Brodzinsky, Elias, Steiger, Gill & Hitt, 1992; Compas, Malcarne & Fondacaro, 1988; Lazarus & Folkman, 1984). The CSI yields scores in three

subscales: seeking social support (sss), problem solving (ps) and avoidance (a). Scores in the latter subscale should reduce after intervention, whereas scores in the seeking social support and problem-solving subscales should increase. Scores in all subscales range from 11-33.

Although it has been used with child populations, psychometric properties have not been tested in child populations. With adult samples it has been found to have good levels of internal consistency for all subscales ($r$ = .93 for sss, .89 for ps and .84 for a), good test-retest reliability ($r$ = .77 - .83 for ps, .8 - .86 for sss and .79 - .82 for a), as well as showing good convergent and discriminant validity (Amirkhan, 1990).

#### 6.3.4.3. Spence children's anxiety scale (SCAS: Spence, 1998).

The SCAS is a 45 item child (8-12 years) self-report measure designed to evaluate symptoms relating to separation anxiety, social phobia, panic attack and agoraphobia, obsessive-compulsive disorder, fear of physical injury and generalised anxiety. Children are asked to rate, on a four point scale from 'never to 'always', the frequency of which they experience each of the symptoms. Scores in the SCAS range from 0-114, and would be expected to decrease post-intervention as a result of the LfL.

This measure is able to reliably discriminate between anxious and non-anxious children. The questionnaire is normed on an Australian sample. The SCAS has been found to have high internal consistency ($r$ =.92), high split half reliability ($r$ =.90), adequate test-retest reliability ($r$ =.63), as well as showing good convergent and discriminant validity (Spence, Barrett & Turner, 2003).

#### 6.3.4.4. Spence children's anxiety scale – parents (SCAS-P: Nauta et al., 2004).

The SCAS-P represents a relatively reliable and valid instrument for the assessment of anxiety among children and adolescents, especially when combined with the child version. It can also be used to evaluate the effects of interventions. The SCAS-P is a parent completed measure derived from the SCAS. Internal consistency was reported in the manual as satisfactory in both the clinical and normal comparison group ($r$ = .83 – .92). The scale is able to discriminate between normal comparisons and anxiety disordered children and shows good convergent validity with another parent measure (CBCL-internalizing) and with the SCAS. Scores on the SCAS-P also range from 0-114 and would be expected to decrease at post-intervention as a result of LfL.

Attached to the SCAS-P were additional questions asking parents to state their child's ethnicity and whether they lived in a single or dual parent home. Parents were also asked if their child had experienced any traumas or significant losses within the last six months (e.g. death of a loved one, parental separation or divorce, change of home or school), which are common stressful experiences for children (Dubow et al., 1993). Parents were informed that these questions were optional.

#### 6.3.4.5. Treatment acceptability measure.

There was no measure of treatment acceptability in the pilot study (as discussed in Section 5.2.4). Pupil diaries were found not to be a good measure of the application of the skills taught in the pilot study therefore were replaced by a questionnaire assessing the social acceptability of the intervention for participants. To ensure anonymity and encourage respondents to answer honestly, they were not asked to provide any identifying information. Participants completed a short questionnaire

as part of their final session whereby they were asked to rate their enjoyment of the programme, how helpful they found it, how much they used the tools learned and how confident they were that they would continue to use the tools after the programme had finished. A copy of this questionnaire can be found in Appendix 5.

#### 6.3.4.6. Wechsler individual achievement test, spelling test, second edition (WIAT-II: Wechsler, 2005).

As discussed in Section 5.2.4 it was important to consider whether the act of taking part in the study could contribute to the results. And so in order to control for a possible Hawthorne effect, a spelling test was included in the main study. Unlike the measures of emotional literacy, coping and anxiety, it was predicted that spelling would not be improved by the intervention, and so the inclusion of a spelling test controls for a possible Hawthorne effect. Participants completed the spelling test from the WIAT-II. The WIAT-II was normed on 892 children and young people from the U.K. across a range of geographical areas, ages, ethnicities and educational background of parents. The internal consistency for the spelling subtest from this normed sample was good, $r$ = .94 for pupils aged 9-10 years old.

The spelling subtest had six age-related start points. For the purpose of the current study teachers were instructed to begin at the start rate for 8-9 year olds. Usually administrators of this subtest stop after the respondent has had six continuous scores of zero. However, as this was not practical due to the whole class administration, teachers were instructed to administer until the end of the subtest.

#### 6.3.4.7. Facilitator fidelity and participant attendance.

The pilot study identified the need for inclusion of measures of fidelity to intervention and participant attendance during the intervention (see Section 5.2.4). In the main study therefore, programme facilitators were asked to complete a programme

fidelity checklist on a weekly basis asking them to rate on a scale of 1 (did not follow the manual at all) to 7 (completely followed the manual) the extent to which they followed the programme manual and provide information on any areas where they deviated from the programme including why these deviations were necessary. Facilitators also recorded participant attendance at each lesson so that any pupils who did not attend for at least eight of the intervention lessons were not included in analyses of intervention effects. As no new material was presented in lessons nine and ten, participation in eight lessons was established as the cut-off point for inclusion in data analyses.

## 6.4. Results

### 6.4.1. Missing Data and Attrition

Missing data in the current study included any data missing because a child was absent from any of the three assessment sessions (pre-, post-intervention and six month follow-up). Data screening revealed a number of participants who did not complete all the questionnaires or who completed the questionnaires incorrectly. Incomplete responses on questionnaires were entered as missing data and by PASW default, were excluded from analysis.

Two comparison group classes did not complete any of the post- evaluation measures and so were subsequently dropped from the study. From the sixteen classes remaining in the study at post-intervention, two in the psychologist-led intervention group, one in the teacher-led intervention group and six in the comparison group did not complete follow-up measures. This resulted in three classes in the psychologist-group, four in the teacher-led group and three comparison classes available for pre-, post-intervention and six month follow-up analyses.

Table 6:2

*Rates of Missing Data on Outcome Measures Across Groups*

| | | Psychologist-led Intervention Group *n* (%) | Teacher-led Intervention Group *n* (%) | Comparison Group *n* (%) |
|---|---|---|---|---|
| SCAS | Pre | 4 (3.63) | 5 (5.81) | 6 (4.03) |
| | Post | 6 (5.46) | 4 (4.65) | 9 (6.04) |
| | Follow-up | 44 (40) | 19 (22.13) | 115 (77.2) |
| EL | Pre | 6 (5.46) | 2 (2.32) | 5 (3.4) |
| | Post | 10 (9.09) | 3 (3.49) | 11 (7.4) |
| CSI (A) | Pre | 6 (5.46) | 2 (2.32) | 9 (6) |
| | Post | 3 (2.73) | 7 (8.14) | 13 (8.7) |
| | Follow-up | 42 (32.18) | 45 (52.23) | 115 (71.2) |
| CSI (PS) | Pre | 6 (5.46) | 2 (2.32) | 9 (6) |
| | Post | 3 (2.73) | 7 (8.14) | 13 (8.7) |
| | Follow-up | 43 (39.09) | 45 (52.23) | 115 (71.2) |
| CSI (SSS) | Pre | 6 (5.46) | 2 (2.32) | 9 (6) |
| | Post | 4 (3.64) | 7 (8.14) | 13 (8.7) |
| | Follow-up | 42 (32.18) | 45 (52.23) | 115 (71.2) |
| SCAS (P) | Pre | 21 (19.09) | 28 (32.56) | 37 (24.8) |
| | Post | 58 (52.73) | 37 (43.02) | 56 (37.6) |
| | Follow-up | 92 (83.64) | 48 (55.81) | 107 (71.8) |
| WIAT-II | Pre | 21 (19.09) | 1 (1.16) | 17 (11.41) |
| Spelling test | Post | 25 (22.73) | 6 (6.98) | 19 (12.76) |

Key:

SCAS: Spence children's anxiety scale

SCAS – P: Spence children's anxiety scale, parents' version

EL: Emotional Literacy

CSI (a): Coping strategy indicator (avoidance)

CSI (ps): Coping strategy indicator (problem solving)

CSI (sss): Coping strategy indicator (seeking social support)

Rates of missing data and attrition are displayed in Table 6:2. It can be seen that levels of missing data and attrition were similar across all groups at pre- and post-intervention, and between the psychologist-led and teacher-led intervention groups at follow-up intervention. With the exception of the SCAS-P and follow-up data, levels of missing data were reasonably small.

### 6.4.2. Checks on the Assumptions of ANCOVA

Checks on the normality of the distribution were carried out on all the dependent variables. Due to the large sample size, values of skewness and kurtosis were not calculated, as recommended by Field (2009). Levene's tests and Kolmogorov-Smirnov tests are often found to be significant in large samples even when the data do not differ that much from a normal distribution or if the variances are not that unequal (Field, 2009), and so checks for normal distributions were carried out visually using graphs and Q-Q plots. It was concluded that the data were normally distributed. The assumptions of homogeneity of regression slopes were also tested and no violations were found.

### 6.4.3. Preliminary Analyses

Preliminary analyses were conducted to ensure that groups of participants within each of the groups did not differ from each other at intervention start. No significant differences were found between the groups on gender, $\chi^2(2) = 4.04$, $p = .133$, or additional support needs, $\chi^2(12) = 17.35$, $p = .137$. As can be seen from Table 6:1, pupils in the teacher-led group were younger than pupils in the psychologist-led and comparisons groups. This difference was significant, $F(2,312) = 7.69$, $p = .001$, $r = .21$.

Table 6:3 shows the frequency of participants in each group who had achieved or not achieved the national standard in attainments, and suggests that participants in

the comparison group were more likely to have achieved the national standard in attainments in maths and reading than participants in either of the intervention groups. This difference was significant, $\chi^2(2) = 30.87$, $p < .001$ for maths, and $\chi^2(2) = 9.99$, $p = .007$ for reading. This may due to classes in the comparison group being straight primary six classes and one class a composite primary six-seven class, whereas classes in both the psychologist- and teacher-led intervention groups contained one composite primary 5/6 class. Thus pupils in primary five will not have been exposed to the same learning as pupils in primary six, and similarly pupils in primary seven would have been exposed to more learning than those in primaries five and six, and so differences in attainments may be expected. There were no differences in writing attainments on the 5-14 curriculum, $\chi^2(2) = 2.74$, $p = .254$.

Table 6:3

*Frequency of Participants Meeting National Standard in Attainments*

| | Reading | | Maths | | Writing | |
|---|---|---|---|---|---|---|
| | Met *n* (%) | Not met *n* (%) | Met *n* (%) | Not met *n* (%) | Met *n* (%) | Not met *n* (%) |
| Psychologist-led Group | 14 (63.63) | 8 (36.36) | 17 (73.91) | 6 (26.09) | 15 (68.18) | 7 (31.82) |
| Teacher-led Group | 60 (83.83) | 12 (16.66) | 33 (45.83) | 39 (54.17) | 51 (29.17) | 21 (29.17) |
| Comparison Group | 72 (91.14) | 7 (8.86) | 70 (87.5) | 10 (12.5) | 64 (81.01) | 15 (18.99) |

Table 6:4 displays the means and standard deviations on the dependent variables at pre-, post-intervention and six month follow-up. One-way analyses of variance (ANOVAs) were carried out to test for differences between the groups on

each of the dependent variables at pre- intervention. No significant differences were found between the groups on spelling, $F(2,303) = 1.3$, $p = .274$, anxiety, $F(2,327) = .13$, $p = .878$, parents ratings of their child's anxiety, $F(2,256) = .39$, $p = .681$, or on emotional literacy, $F(2,329) = 2.41$, $p = .091$ Significant differences were found between the groups on all coping skills subscales: avoidance, $F(2,325) = 8.17$, $p < .001$, problem solving, $F(2,326) = 4.28$, $p = .015$, seeking social support, $F(2, 326) = 4.96$, $p = .008$. Post hoc tests were carried out using the Gabriel test due to unequal sample sizes (see Field, 2005, pg. 342). Gabriel's post hoc test found the psychologist-led group's pre-intervention avoidance score to be significantly greater than the teacher-led ($p = .014$) and the comparison group's pre-intervention avoidance score ($p < .001$). For problem-solving, the pre-intervention score was significantly higher in the comparison group than in the teacher group ($p = .01$), and for seeking social support, the pre-intervention score was significantly higher in the psychologist than comparison group ($p = .009$).

As a result of the significant differences between the groups at intervention start on each of the coping skills subscales, each of the coping skills pre-intervention scores will be used as covariates in analyses.

### 6.4.4. Universal Intervention Effects

Analyses of covariance were conducted on each of the dependent variables to test for differences between the groups at post-intervention and six month follow-up, using the relevant pre-test as well as the three coping skills pre- scores as covariates.

Table 6:4

*Means and Standard Deviations of Each Dependent Variable at Pre-, Post-Intervention and Follow-up by Group*

| | | SCAS | EL | CSI (a) | CSI (ps) | CSI (sss) | Spelling | SCAS-P |
|---|---|---|---|---|---|---|---|---|
| Psychologist-led group | Pre | 27.73 (15.61) | 77.99 (10.95) | 22.53 (4.28) | 19.20 (4.18) | 21.11 (4.23) | 98.14 (14.97) | 13.00 (7.33) |
| | Post | 14.84 (10.20) | 80.12 (9.44) | 17.09 (3.90) | 27.31 (3.45) | 26.08 (3.91) | 101.13 (14.44) | 9.89 (6.54) |
| | Follow-up | 13.27 (10.47) | | 17.37 (5.00) | 27.04 (5.37) | 24.79 (4.02) | | 9.83 (7.65) |
| Teacher-led group | Pre | 27.76 (15.75) | 76.74 (10.31) | 20.71 (4.67) | 18.01 (4.84) | 19.60 (4.34) | 99.53 (15.23) | 14.19 (9.62) |
| | Post | 16.98 (11.28) | 78.86 (8.62) | 16.48 (3.69) | 27.18 (3.24) | 24.29 (5.11) | 100.40 (16.77) | 13.33 (8.45) |
| | Follow-up | 11.70 (8.44) | | 15.10 (3.57) | 24.68 (4.61) | 23.56 (4.57) | | 12.34 (9.08) |
| Comparison group | Pre | 28.64 (15.95) | 79.67 (9.01) | 20.32 (4.21) | 19.79 (4.35) | 19.43 (4.41) | 101.30 (13.42) | 13.97 (10.36) |
| | Post | 25.94 (14.18) | 78.81 (8.87) | 21.42 (5.22) | 17.71 (3.87) | 23.41 (4.80) | 105.62 (15.73) | 13.19 (8.44) |
| | Follow-up | 22.47 (13.42) | | 19.91 (5.42) | 16.59 (3.43) | 17.59 (3.78) | | 12.19 (9.20) |

Key:

SCAS: Spence children's anxiety scale

SCAS – P: Spence children's anxiety scale, parents' version

EL: Emotional Literacy

CSI (a): Coping strategy indicator (avoidance)

CSI (ps): Coping strategy indicator (problem solving)

CSI (sss): Coping strategy indicator (seeking social support)

#### 6.4.4.1. Emotional literacy.

There was a significant group effect on emotional literacy after controlling for the pre- emotional literacy and pre- coping skills scores, $F(2,298) = 6.00$, $p = .003$. Planned contrasts revealed significant differences between the psychologist-led and comparison groups' post-scores, $t(298) = 3.25$, $p = .001$, $r = .19$, a small-medium effect (Cohen, 1988, 1992) and significant differences between the teacher-led and comparison groups, $t(298) = 2.44$, p = .015, $r = .14$, a small effect. In both instances, the differences favoured the intervention groups. Post hoc tests using the Sidak adjustment, a slightly less conservative variant of a Bonferroni correction (Field, 2005), found no significant differences between the psychologist-led and teacher-led groups ($p = .881$).

#### 6.4.4.2. Coping skills.

There was also a significant effect of group after controlling for the pre-coping skills scores on the coping subscales, avoidance, $F(2,303) = 46.09$, $p < .001$, and problem solving, $F(2.303) = 235.71$, $p < .001$, but not for seeking social support, $F(2,302) = 1.49$, $p = .226$. Planned contrasts revealed significant differences favouring the intervention groups between the psychologist-led and comparison groups on avoidance, $t(303) = -8.11$, $p < .001$, $r = .42$, a medium-large effect, and problem-solving, $t(303) = 18.61$, $p < .001$, $r = .73$, a large effect, and between the teacher-led and comparison groups on avoidance, $t(303) = -8.13$, $p < .001$, $r = .42$, a medium to large effect, and problem solving, $t(303) = 18.11$, $p < .001$, $r = .72$, a large effect. There were no significant differences between the psychologist- and teacher-led groups on avoidance ($p = .962$) or problem solving coping skills ($p = .956$).

#### 6.4.4.2.1. *Intervention effects at six month follow-up.*

At six month follow-up there continued to be a significant effect of group on avoidance coping skills, $F(2,132) = 14.71$, $p < .001$, and problem solving skills, $F(2,132) = 52.66$, $p < .001$. A significant effect of group also emerged for seeking social support coping skills at six month follow-up, $F(2,132) = 36.64$, $p < .001$.

Planned comparisons found that there continued to a significant difference favouring the intervention groups between the psychologist-led and comparison groups on avoidance, $t(132) = -3.73$, $p < .001$, $r = .31$, a medium effect, and problem solving, $t(132) = 10.21$, $p < .001$, $r = .66$, a large effect. As with the group effect on seeking social support skills at six month follow-up, a significant difference also emerged between the psychologist- and comparison groups at six month follow-up, favouring the psychologist group, $t(132) = 8.58$, $p < .001$, $r = .61$, a large effect. The same findings emerged when comparing the teacher-led intervention group with the comparison group, $t(132) = -5.42$, $p < .001$, $r = .31$, a medium effect for avoidance, $t(132) = 7.47$, $p < .001$, $r = .55$, a large effect for problem solving, and $t(132) = 7.04$, $p < .001$, $r = .52$, a large effect for seeking social support coping skills.

As was found at post-intervention, there were no differences between the psychologist- and teacher-led groups at six month follow-up on problem solving coping skills, $p = .147$. There were also no differences between these groups on seeking social support coping skills, $p = .864$. However, there was a significant difference favouring the teacher-led group compared to the psychologist-led group on avoidance coping skills at six month post-intervention, $p = .025$.

### 6.4.4.3. Self-reported anxiety.

As for emotional literacy and coping, there was a significant effect of group after controlling for the effect of the self-reported anxiety and all coping skills pre-

scores, $F(2,302) = 36.25$, $p < .001$. Planned contrasts revealed that post-anxiety scores were significantly lower in the psychologist-led compared with comparison groups, $t(302) = -8.09$, $p < .001$, $r = .41$, a medium-large effect, and similarly between the teacher-led and comparison groups, $t(302) = -5.77$, $p < .001$, $r = .31$, a medium effect. Post hoc tests using the Sidak adjustment found no significant differences between the psychologist-led and teacher-led groups ($p = .184$).

#### 6.4.4.3.1. *Intervention effects at six month follow-up.*

There was still a significant effect of group at six month follow-up after controlling for the effect of the pre- anxiety and coping skills scores, $F(2,152) = 16.19$, $p < .001$. Planned contrasts again revealed significant differences between the psychologist-led and comparison groups' anxiety six month follow-up scores, favouring the psychologist-led group, $t(152) = -5.26$, $p < .001$, $r = .39$, a medium-large effect, and significant differences between the teacher-led and comparison groups, $t(152) = -5.15$, $p < .001$, $r = .39$, a medium-large effect, favouring the teacher-led intervention group. Post hoc tests using the Sidak adjustment found that there remained to be no significant differences between the psychologist-led and teacher-led groups at six month follow-up ($p = 1.00$).

### 6.4.4.4. Parents' ratings of their child's anxiety.

In contrast to the other dependent variables, there was no significant main effect of group after controlling for the pre- parents' ratings anxiety score and the coping skills pre- scores at post-intervention, $F(2,145) = 1.87$, $p = .160$, or at six month follow-up, $F(2,82) = 1.57$, $p = .215$.

### 6.4.4.5. Spelling.

Inspection of the means in Table 6:4 demonstrates that spelling scores increased from pre- to post-intervention across all three groups, and that this increase

was greater in the comparison group. There was a significant effect of group after controlling for the effect of the covariates (pre- spelling and pre- coping skills), $F(2,270) = 3.29$, $p = .039$. Planned contrasts revealed no significant differences between the psychologist-led and comparison groups' spelling post-scores, $t(270) = -1.34$, $p = .183$, $r = .08$, a small effect, but significant differences between the teacher-led and comparison groups, $t(270) = -2.55$, $p = .011$, $r = .15$, a small-medium effect. Post hoc tests using the Sidak adjustment found no significant differences between the psychologist-led and teacher-led groups ($p = .619$).

### 6.4.5. Treatment acceptability.

Participants completed the treatment acceptability measure during the last LfL session. Participants in the psychologist group were more likely to recommend LfL to a friend than participants in the teacher group, $\chi^2(1) = 33.22$, $p < .001$. Mann-Whitney tests were carried out to test for differences between the two intervention groups on the questions within the treatment acceptability measure. Participants in the psychologist-led group enjoyed LfL significantly more (*Median [Mdn]* = 4) than those in the teacher-group (*Mdn* = 3), $U = 907$, $p < .001$, $r = -.61$, found LfL more helpful (*Mdn* = 4) than those in the teacher-led group (*Mdn* = 3), $U = 1215.5$, $p < .001$, $r = -.50$, used the tools they learned in LfL more (*Mdn* = 3) than those in the teacher-led group (*Mdn* = 3), $U = 1431.5$, $p < .001$, $r = -.45$, and were more confident that they would continue to use the tools once LfL had finished (*Mdn* = 4) than those in the teacher-led group (*Mdn* = 3), $U = 1327$, $p < .001$, $r = -.43$.

### 6.4.6. Facilitator Fidelity

Three class teachers out of the four, and all three psychologists completed the facilitator fidelity record. Facilitators rated on a scale of 1 (did not follow the manual at all) -7 (completely followed the manual) how closely they followed the manual

after each lesson and provided details regarding aspects of the programme that they were unable to follow and why. Table 6:5 displays the mean fidelity rating for each lesson across psychologist- and teacher-led groups and the overall fidelity measure for each lesson. Overall there was a high level of facilitator fidelity across intervention groups. As a result, confidence is increased in any intervention effects found as they are more likely to be due to the intervention programme than to possible individual deviations from programme manual.

Table 6:5

*Mean Fidelity Ratings Across Facilitator Groups*

| | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 | Lesson 5 | Lesson 6 | Lesson 7 | Lesson 8 | Lesson 9 | Lesson 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Teacher-led | 6.67 | 6.33 | 5.67 | 7 | 6 | 6.33 | 6 | 6 | 6.33 | 6 |
| Psychologist-led | 6.6 | 6.6 | 6 | 6.4 | 6.6 | 6.8 | 7 | 5.6 | 5.6 | 6.2 |
| Total Mean | 6.63 | 6.5 | 5.88 | 6.63 | 6.38 | 6.63 | 6.63 | 5.75 | 5.88 | 6.14 |

### 6.4.7. Effects of School Class

Within this study, individual pupils were nested within classes, which are in turn nested in schools. In order to undertake multi-level modelling to take into account any nested effects of class, at least 20 groups are recommended at the bottom level of the cluster (Field, 2009). Therefore, as there were only 18 classes in the present study and only 8 classes available from pre- through to follow-up, neither the cluster effects of school or class could be considered in analyses. The effects of class on the intervention then were examined by gain scores. That is, participants' pre-scores were subtracted from their follow-up scores, and the resulting score was their gain score. For the SCAS and CSI avoidance, a negative gain score indicated change

in the predicted direction, and for seeking social support and problem-solving coping skills, a positive gain score indicated change in the predicted direction. Table 6:6 shows the mean gain scores across classes from pre- to six month follow-up on the SCAS, CSI (a), CSI (sss) and CSI (ps) dependent variables within the comparison, teacher-led and psychologist-led groups.

It is important to note that there is some controversy regarding the use of gain scores. The principal arguments against the gain score approach are that the simplicity is deceiving. Gain scores may not be very reliable, power is usually greater for ANCOVA, and the gain scores are negatively correlated with the pre-test (Knapp & Schafer, 2009).

One-way ANOVAs using gain scores were calculated to test for the effect of the intervention on the change from pre- to six month follow-up. In the psychologist-led group, significant differences were found between classes in the gain scores for anxiety, $F(2,62) = 5.35$, $p = .007$ and problem solving coping skills, $F(2,62) = 3.48$, $p = .037$. No significant differences were found between the classes in gain scores for seeking social support, $F(2,62) = 1.03$, $p = .363$ or avoidance coping skills, $F(2,62) = 2.13$, $p = .127$.

For the teacher-led group, no significant differences between the classes were found on the gain scores for anxiety, $F(2,62) = .54$, $p = .947$, seeking social support, $F(1,39) = 1.32$, $p = .257$, or problem-solving coping skills, $F(1,39) = 13.46$, $p = .07$. Significant differences were found between the gain scores on avoidance coping skills, $F(1,39) = 11.85$, $p = .001$.

In the comparison group, no significant differences were found between the classes' gain scores on anxiety, $F(1,31) = 1.79$, $p = .19$, seeking social support, $F(1,31)$

= 1.39, $p$ = .247, avoidance, $F(1,30)$ = 1.40, $p$ = .247, or on problem-solving, $F(1,31)$ = 1.52, $p$ = .228.

Due to sample size, no further analyses could be carried out to investigate the effects of class. However, it can be concluded that there were was evidence of differences between the gain scores among classes, and therefore that the intervention was more effective in some classes than others.

Table 6:6

*Mean Gain Scores Across Classes*

| Group | Class | SCAS | CSI (a) | CSI (sss) | CSI (ps) |
|---|---|---|---|---|---|
| Teacher | 1 | -16.41 (8.30) | -10.45 (2.91) | 3.05 (4.62) | 4.90 (5.44) |
| | 2 | -17.91 (21.37) | -5.95 (5.10) | 4.71 (4.65) | 8.29 (6.17) |
| | 3 | -17.02 (15.04) | | | |
| Psychologist | 4 | -20.19 (10.38) | -3.86 (6.11) | 3.14 (3.92) | 4.57 (4.01) |
| | 5 | -23.18 (13.31) | -7.04 (5.27) | 4.76 (4.03) | 9.20 (7.83) |
| | 6 | -10.74 (13.53) | -5.32 (3.96) | 3.21 (5.09) | 6.26 (5.10) |
| Comparison | 7 | -10.60 (16.32) | -1.00 (4.24) | -3.62 (3.61) | -5.94 (5.13) |
| | 8 | -3.89 (12.48) | .94 (5.00) | -1.94 (4.51) | -3.94 (4.16) |

Key:

SCAS: Spence children's anxiety scale

CSI (a): Coping strategy indicator (avoidance)

CSI (ps): Coping strategy indicator (problem solving)

CSI (sss): Coping strategy indicator (seeking social support)

### 6.4.8. Intervention Effects for Children "At-Risk"

The data were examined to identify the number of participants scoring in the clinical range of anxiety. Participants were divided into two groups, 'at risk' or 'healthy' based on their pre-intervention scores on the SCAS. A score of 42.48 or

above on the SCAS is considered in the clinical range (Spence, 1997), participants scoring 42.48 or above were placed in the 'at risk' group.

Table 6:7 shows the frequency of risk status in each group over time. McNemar tests revealed significant changes in the "at risk" status of participants from pre- to post-intervention in the psychologist-led intervention group ($p < .001$) and in the teacher-led intervention group ($p = .022$), but not in the comparison group ($p = .202$). The same results were found when comparing the pre- "at risk" status to the follow-up "at risk" status. Participants in the psychologist- and teacher-led intervention groups were significantly more likely to move from "at risk" at pre-intervention to no longer being "at risk" at post-intervention as well as no longer being "at risk" at six month follow-up, $p = <.001$ for the psychologist-led group, $p = <.001$ for teacher-led group, and $p = .125$ for comparison group.

Table 6:7

*Frequencies of "At Risk" Status From Pre- to Post-Intervention*

| | | "At risk" at post-intervention | | "At risk" at 6-month follow-up | |
|---|---|---|---|---|---|
| | "At risk" at pre-intervention | Yes | No | Yes | No |
| Psychologist-led group | Yes | 1 | 18 | 0 | 16 |
| | No | 0 | 81 | 1 | 47 |
| Teacher-led group | Yes | 1 | 11 | 0 | 11 |
| | No | 2 | 65 | 0 | 54 |
| Comparison group | Yes | 10 | 14 | 3 | 4 |
| | No | 9 | 102 | 0 | 26 |

### 6.4.9. Summary of Key Findings

Returning to the research hypotheses, the following is a summary of the key findings of this study.

1. Children's levels of emotional literacy increased in the intervention groups compared to the comparison group.
2. Children's use of avoidance coping skills reduced following LfL in the intervention groups compared to the comparison group, and their levels of problem solving coping skills increased in the intervention group when compared to the comparison group. There was no intervention effect on seeking social support coping skills at post-intervention.
3. Children's levels of self-reported anxiety significantly reduced following LfL in the intervention group compared with the comparison group, but there was no intervention effect on parents' ratings of their child's anxiety.
4. All intervention effects that showed an effect post-intervention, and which were measured again, maintained this effect at six month follow-up. In addition, a significant effect emerged for seeking social support coping skills at six month follow-up, favouring the intervention groups compared to the comparison group.
5. There were no differences between the teacher-led and psychologist-led intervention groups on any of the standardised measures at post- or six month follow-up, with the exception of avoidance coping skills at six-month follow-up, which favoured the teacher- compared with the psychologist-led group. Pupils in the psychologist- group scored higher on all treatment acceptability measures than those in the teacher-led group.

6. There was no positive intervention effect on spelling. However, there was a significant difference favouring the comparison group compared with the teacher-led group.

# Chapter 7. Discussion

This study aimed to evaluate the effectiveness of LfL in promoting children's mental health and reducing mental health problems through the promotion of emotional literacy and coping skills and the reduction of levels of anxiety. It was predicted that emotional literacy, and problem-solving and seeking social support coping skills would increase in the intervention group compared to the comparison group, and that avoidance coping skills and anxiety would decrease in the intervention group compared with the comparison group.

## 7.1. Reducing Anxiety

The study found that post-intervention, intervention group participants showed reduced levels of anxiety compared to comparison group participants. The findings of the current study are generally consistent with the results of the Friends for Life studies and its impact on anxiety (e.g. Barrett & Turner, 2001; Lowry-Webster et al., 2001; Lowry-Webster et al., 2003). However, unlike these Friends for Life studies, the current study reported effect sizes as well as statistical significance levels. Statistical significance on its own gives only a partial picture of the outcomes of research, and it is important to report effect size as well (Clark-Carter, 2003), as although a statistical test yields significant results, this does not necessarily mean that the effect it measures is meaningful or important. As a result of this difficulty with significance testing, determining the effect size allows an objective and standardised measure of the magnitude of the observed effect (Field, 2005). The intervention programme, LfL, was found to have medium-large effects on pupils' levels of anxiety both at post-intervention and six month follow-up.

No intervention effects were found for parent-reports of child anxiety. However as none of the other universal interventions studies reviewed in this thesis

measured parent ratings of anxiety it is not known whether lack of parent awareness of child reduction of anxiety is a more general finding. This is consistent with research finding low correlations between parent- and child self-report measures (Wigelsworth et al., 2010). Studies have found low to moderate correlations between children and parent reports of behaviour for internalising and externalising behaviours among the general population (e.g. Verhulst & van der Ende, 1992; Williams, McGee, Anderson, & Silva, 1989) and among children who have been referred to mental health services (e.g. Edelbrock, Costello, Dulcan, Conover, & Kalas, 1986). Children are reported to be better informants of themselves (DiBartolo & Grills, 2006) and as reported in Chapter 2 (Section 2.6.), parents tend to minimise the seriousness of anxiety difficulties.

It is possible that ten weeks is not a sufficient amount of time for parents to observe changes to their child's behaviour, and/or the SCAS-P measure is not sensitive enough to measure the small changes that may exist. More in-depth assessment such as parental diagnostic interviews may be more likely to determine if there was any significant change on parents' ratings of their child's anxiety. Floor effects may also be in operation, thus it is possible that any intervention effect on parent ratings of their child's anxiety would only be found for "at risk" pupils. The lack of significant intervention effect on parent reports of child anxiety may be due to any of these factors individually, or a combination of these factors then rather than a failure of the intervention programme.

### 7.2. Intervention Effects for "At Risk" Participants

Significance and effect sizes are not the only important consideration in evaluating interventions, consideration should also be given to the clinical significance of results, that is any change in diagnostic label. An intervention

programme may show a significant and small effect size which may still be clinically meaningful, and likewise an intervention could demonstrate a significant and large effect size which is not clinically meaningful.

Participants who were classified as being "at risk" on the self-reported pre-intervention anxiety score were significantly more likely to no longer be at risk in the teacher- and psychologist-led intervention groups compared to the comparison group, at both post-intervention and six month follow-up. Four universal studies of the Friends for Life programme considered the intervention's impact on anxiety for "at-risk" participants. The results of Lowry-Webster et al. (2001) and Lowry-Webster et al. (2003) found that a significantly greater percentage of at-risk participants remained in the control group compared with the intervention group at post-intervention and follow-up, and are consistent with the current study. The findings from the current study are also partially consistent with those of Barrett et al. (2005), who found significant differences between high-risk participants across intervention and control groups at follow-up (but not at post-intervention) when the intervention was delivered by a teacher. The results of the current study though are inconsistent with those from Barrett and Turner (2001) who found no significant differences between the psychologist and control groups or between the teacher and control groups on risk status changes at post-intervention. The small numbers of at-risk participants in universal studies can result in samples being underpowered which may be why Barrett and Turner (2001) were unable to detect significant effects for at-risk participants.

Section 2.2.1.1 highlighted the advantages of universal intervention programmes over selective or indicated interventions, which included reduction in stigmatisation for those participating in targeted (i.e. selective or indicated) interventions. However, other researchers have argued that universal programmes

generally do not provide sufficient dosage, or are targeted enough, to have a discernable impact on the higher risk children (Weissberg et al., 2003). The current study provides preliminary evidence against this, finding that at-risk participants were significantly more likely to no longer be at-risk at post-intervention and six month follow-up.

However, what is not known is whether "at risk" children would benefit more from an intervention such as LfL if it was delivered as a targeted intervention (i.e. indicated or selective method of delivery) rather than as a universal intervention. It may be that more targeted interventions allow for more intensive teaching of the techniques and therefore possibly more benefit. However, targeted delivery where the intervention group was comprised of only those "at risk" of anxiety may be less effective than universal delivery due to a lack of positive role models with positive coping skills, hindering the discussion and learning throughout the lessons and impacting negatively on the delivery process of the intervention programme. Very skilled group facilitators with a high level of expertise may be required in order to effect change for pupils in targeted delivery of the programme.

Sandler (1999) suggested that the effects of prevention programmes should be judged by how well they change targeted outcomes over time. Longer-term follow-up would allow for the programme to be evaluated in terms of preventing mental health problems such as anxiety. While this universal intervention study found significant effects for at-risk participants, future research should compare the effectiveness of universal and targeted delivery of interventions for at-risk participants in order to determine the most effective way of supporting young people with, or at-risk of developing, a mental health problem.

### 7.3. Promoting Social Emotional Competence

The current study found evidence of positive intervention effects on emotional literacy. This is consistent with findings from the PATHS intervention studies (i.e. Greenberg et al., 1995; Greenberg et al., 2004; Kusche, 2002) and the Head Start REDI intervention (Bierman et al., 2008). It is also consistent with the results of Caplan et al's (1992) social emotional competence intervention as discussed in Chapter 2, bearing in mind that it was argued that social emotional competence involved the same skills as emotional literacy (see Section 2.4.1). It is important to note that both the PATHS and Head Start REDI interventions were implemented over much longer periods of time than LfL (i.e. one year compared to ten weeks in the present intervention). There is evidence to suggest that interventions lasting longer than nine months were more likely to be effective than shorter interventions (e.g. Catalano et al., 2002), and Greenberg et al. (2001) identified that multi-year programmes which aim to intervene in different domains, e.g. with the child, the school and family, were more likely to be successful. However, the current study, which was of a short-term intervention, evidenced significant effects on emotional literacy. This is encouraging, as it is possible that given the increasing demands of the school curriculum that schools may more likely to implement and sustain shorter interventions that make less demands on curriculum time than longer interventions.

It is worth considering again the construct of emotional literacy/intelligence, and in particular, its measurement. Chapter 2 argued that the terms 'emotional intelligence' and 'emotional literacy' are interchangeable and are best considered under the broader construct of social emotional competence. This is because there is no clear answer to the question "what is emotional intelligence?", with some claiming that it is an ability (e.g. Mayer, Salovey, & Caruso, 1999) and others viewing it as

broader to include personality variables (e.g. Bar-On, 1997; Goleman, 1995; Petrides et al., 2007). There is also considerable overlap with the construct of emotional intelligence and constructs such as social intelligence, empathy, alexithymia and emotion regulation for example (Barchard, 2003). It has also been proposed that trait and ability emotional intelligence should be seen as umbrella terms encompassing many previously investigated and empirically supported psychological constructs, such as Crick & Dodge's (1994) social information processing model and Thompson's (1994) definition of emotion regulation (Qualter, Gardner, & Whiteley, 2007). As a result of this confusion, and because definitions of emotional intelligence describe the same set of skills contained in definitions of social emotional competence, the current study argues that emotional intelligence is not a strong enough construct to be considered on its own and is better considered as a component of social emotional competence. However, as a result of the broad nature of social emotional competence (See Section 2.4.1), evaluations of interventions programmes can measure the effect of the programme on emotional intelligence as a component of social emotional competence.

This then leads onto further discussion around the measurement of emotional intelligence. Researchers adapting different theoretical positions have developed different commercially available measures of emotional intelligence (Qualter et al., 2007), and there are significant differences to the types of measures employed depending on the model of emotional intelligence. Trait models tend to use self-report measures, whereas the ability model of emotional intelligence uses a maximal measure. Measures of maximal behaviour require respondents to complete a task that actually taps the underlying construct in question, and are considered to be a more direct measure of the skill by academics and practitioners (Humphrey, Morris, Farrell,

& Woods, 2007). Self-report measures are preferable in studies such as this due to the ease at which they can be used with large populations. However, their disadvantage is that they are measuring what the respondent says they do, and not what they actually do in situations.

There is also lack of psychometrically sound measures of emotional intelligence or emotional literacy that have been normed on children from the U.K., with the Emotional Literacy Indicator used in the current study being one of the few available. It is also important to consider that ceiling effects may exist in the current study given that the population is from a normal sample and not a clinical sample. As a result, the clinical significance of any intervention effect on emotional intelligence is unknown.

The support that facilitators received during the implementation of the intervention was substantially more in the Head Start REDI study compared to the current study, which involved minimal training and support for facilitators. It was also argued in Chapter 3 that sustainability is a key issue in mental health interventions in schools, and that sustainability was almost as important as effectiveness. Interventions that are implemented over shorter periods of time and which do not require a high level of support or training for the facilitator are likely to be more acceptable, and sustainable, for schools to implement. The intervention programme evaluated in the current study, LfL, has shown significant improvements for children over a short period of time, and under sustainable implementation conditions which required minimal training and support for the facilitator.

### 7.4. Promoting Coping Skills

The study found that post-intervention, intervention group participants showed improvements in problem-solving coping skills and reduced avoidance coping skills

compared to comparison group participants. These results are partially consistent with the results by Lock and Barrett (2003) using the FfL intervention. Both studies found a significant intervention effect on avoidance coping skills. However, inconsistent with the Friends for Life intervention, the present study also found evidence of significant group effects on problem-solving which was not found by Lock and Barrett. A similar pattern was found when the results of the current study were compared with other intervention programmes reporting significant effects (I CAN DO, Dubow et al., 1993; Zippy's Friends, Mishara & Ystgaard, 2006; Best of Coping, Cotta et al., 2000). As with the Friends for Life study, not all of those studies found significant intervention effects on all aspects of coping skills. For example, Cotta et al. (2000) only found significant intervention effects for non-productive coping skills (e.g. avoidance) but not for productive methods of coping (such as problem-solving) or reference to others (e.g. seeking social support). These differences between the current study, which found significant intervention effects on all three coping skills subscales at follow-up and other studies which only found significant intervention effects on aspects of coping skills (e.g. Cotta et al., 2000; Dubow et al., 1993; Lock & Barrett, 2003) may be related to the intervention programme in the current study, LfL, having a stronger coping skills theoretical basis due to LfL differentiating between controllable and uncontrollable problems, which these other programmes did not.

It is important too to consider how coping skills were measured in the current study, as this has implications for interpretation of the results. There are two common methods of measuring coping skills; generation of possible responses to hypothetical situations (e.g. Krohne & Rogner, 1982; Matthews & Angulo, 1980; Spivack & Shure, 1982), and the method applied in this study, the rating of usage of common strategies.

A criticism of the first method of assessing coping is that it does not measure what the respondent actually does, or has done in response to the situation, and this may be quite different from what they would do. What is missing in both methods though is consideration of the "goodness of fit" between coping attempts and other factors of stress and coping (e.g., Lerner, Baker & Lerner, 1985; Lerner & Lerner, 1983). As was suggested in Chapter 2 (see Section 2.5), there is an important distinction between coping strategies applied to controllable versus uncontrollable situations or problems, indeed this was taught in LfL. Thus, the same strategy that protects against distress in a controllable situation may relate to more distress for an uncontrollable situation (Forsythe & Compas, 1987), due to the inability to actively change uncontrollable situations. This highlights the need for research to distinguish between effectiveness and adaptiveness of coping strategies (Tolan, Guerra & Montaini-Klovdahl, 1997), where effectiveness relates to long-term effect of reducing the impact of the stressor and adaptiveness relates to short-term effects of decreasing distress in response to the stressor (Edlynn, Gaylord-Harden, Richards & Miller, 2008).

This issue of effectiveness and adaptiveness of the coping strategy was not considered in the current study. This methodological concern of the validity of measuring coping with checklists in order to assess the effectiveness of coping pervades coping research (Edlynn et al., 2008). Indeed, Coyne and Racioppo (2000) argued for an overhaul of the current checklist-method of assessing coping in order to more accurately and meaningfully assess the complexity of coping. Although significant improvements in coping skills were found in the current study, the measure of coping did not allow for consideration of the appropriateness of the coping strategy in relation to the presenting problem, limiting the conclusions that can be drawn.

Statistical significance effects were found in the current study, but only by evaluating whether or not the strategy used was appropriate for the presenting problem (i.e. the "goodness of fit"), can the clinical significance of results be considered.

### 7.5. Maintenance at Follow-up

Significant intervention effects that were found at post-intervention, and which were then assessed at six month follow-up all remained significant. At six month follow-up participants in the two intervention groups demonstrated improved levels of problem-solving coping skills compared to comparison group participants and reduced levels of anxiety and avoidance coping skills. In addition, participants in the intervention groups also showed increased seeking social support coping skills compared to comparison participants at six months, which was not found at post-intervention. Similar putative delayed intervention effects have been found in other intervention studies on depression (e.g. Jaycox, Reivich, Gillham & Seligman, 1994) and anxiety (e.g. Barrett et al., 2005; Dadds et al., 1997). This delayed intervention effect may have been due to changes in classroom climate or ethos as a result of LfL. It is possible that participating in the programme as a whole class had an impact on relationships as the programme required some sharing of personal information and collective problem solving. Seeking social support was not a tool directly taught in LfL, although throughout the programme participants were asked to share personal worries or problems and to work together as a class or in groups to solve some of these problems or find positive ways of coping with them. The intervention programme, therefore, may have directly or indirectly supported participants to change their help seeking behaviour.

### 7.6. Teacher versus Psychologist Facilitators

No differences were found at post-intervention between the psychologist and teacher groups on any of the outcomes measures (emotional literacy, coping skills, anxiety, spelling). At six month follow-up, there were no differences between the groups on anxiety and two of the coping skills subscales, i.e. seeking social support and problem-solving, but a significant difference on avoidance coping skills emerged. At follow-up assessment, participants in the teacher-led group showed significantly less avoidance coping skills than pupils in the psychologist-led group. It is possible that as the class teacher delivered the intervention in the teacher-led group, that these classes were more likely to continue to apply the skills learned in LfL beyond the intervention finishing than those classes where the intervention was led by a psychologist. As well as possibly impacting on individual pupils, this could also further impact upon the classroom environment, and so may account for this intervention effect favouring the teacher-led groups compared with psychologist-led groups. If this were the case, differences between the teacher- and psychologist-led groups would be expected in other outcome measures. Longer-term follow-up measures are required to determine if this may be the case.

The findings from the one study of the Friends for Life programme which compared psychologist and teacher facilitators with each other, as well as with a comparison group (i.e. Barrett & Turner, 2001), are consistent with the current study. However this current study of LfL extends the findings that teachers and psychologists are equally effective facilitators of intervention programmes that reduce anxiety due to the inclusion of a six month follow-up. There are no studies of the Friends for Life intervention comparing psychologist and teacher facilitators that consider intervention effects immediately beyond post-intervention. There are also no

universal intervention studies that compare the effectiveness of teachers with psychologists in improving coping skills, or emotional literacy. It was suggested by Spence et al. (2005) that teachers may not have the background knowledge and skills to implement interventions effectively. This evaluation of LfL provides contradictory evidence to this suggestion. It was also argued in Chapter 3 that interventions delivered by teachers were more likely to be sustainable than those delivered by mental health professionals such as psychologists, due to the costs involved in using mental health professionals. The current study then suggests that LfL is a sustainable intervention as it can be equally effective when implemented by teachers as by psychologists.

It is important to acknowledge that individual differences exist between facilitators, including teachers, and that these differences may contribute to the effectiveness of intervention programmes such as LfL. To some extent these can be mitigated against by ensuring high levels of fidelity to the intervention programme. They may be further mitigated against by providing schools with information such as the interpersonal skills required in order to deliver an intervention programme such as LfL and by programme developers or Educational Psychology Services providing a support service to schools and teachers who are delivering the programme. Mitigating against individual differences in facilitators can only be in so far as fidelity to implementation can be controlled.

### 7.7. Effect on Spelling

The hypothesis that there would be no intervention effect favouring the intervention groups on spelling was supported but instead significant differences favouring the comparison group were found. This was not predicted. Explanations for why the comparison group improved more are unclear and warrant further

investigation. It is likely that the greater improvements in spelling in the comparison group were related to the comparison group comprising more pupils primary seven pupils than either intervention group. It is however possible that the intervention group may have been disadvantaged in their academic work by taking part in the intervention. Although the comparison group continued to receive their regular PSE, it is likely that PSE lessons were not as long as the LfL lessons, and so intervention pupils may have received less time in class focusing on academic subjects. This finding of significant intervention effects for spelling favouring the comparison over the intervention group suggests that intervention studies of mental health programmes should include measures of academic attainment as well as mental health when evaluating outcomes, to ensure that there are no long term disadvantages to pupils in any area as a result of the intervention programme.

### 7.8. Treatment Acceptability

As stated in Section 5.2.4, treatments that are viewed as more acceptable are more likely to be sought, initiated and adhered to than those that are not acceptable by participants (Kazdin, 1980). While the current study found no differences between the teacher- and psychologist-led groups on standardised outcome measures (with the exception of avoidance coping skills at follow-up), LfL was found to be higher on all the questions measuring treatment acceptability in the psychologist-led group as compared to the teacher-led group. Participants in the psychologist- group reported that they enjoyed the programme more, found it more helpful, used the skills they learned more outside of the lessons, were more confident that they would continue to use the skills, and would be more likely to recommend the programme to a friend, than participants in the teacher-led group. This warrants further investigation in two ways. If participants are more likely to adhere to interventions that they find more

acceptable, it may be that participants will also be more likely to continue to apply the skills learned once the intervention is finished, and so over a longer period of time than six months differences may then emerge between teacher- and psychologist-led groups on standardised evaluation measures. Second, further research to determine whether this difference is actually about the specific skills of a psychologist or the 'novelty' factor of having someone else other than the class teacher deliver the intervention. Findings from longitudinal studies comparing psychologist and teacher facilitators would raise important factors to consider in the implementation of mental health intervention programmes in schools.

### 7.9. Effect of School Class

Gain scores were used to test for differences in the effectiveness of the intervention between the classes. Evidence of differences in effectiveness of the intervention in anxiety and problem-solving were found among the psychologist-led classes, for the teacher-led classes there was evidence of differences in the gain scores for avoidance coping skills, and there were no differences between the gain scores on any of the dependent variables in the comparison group. Evidence of nested class or school effects was found in similar intervention studies (e.g. Caplan et al., 1992), but not in others (e.g. Fraser et al., 2005; Spence et al., 2005). Differences in intervention effectiveness among classes could be related to a number of implementation factors, including quality of implementation of the programme. Although the current study measured fidelity of implementation, there was no measure of quality. High quality of implementation has been found to be necessary to produce intervention effects (Kam et al., 2003). It may be that among the facilitators, some were more able to deliver a higher quality intervention than others. Factors such as the characteristics of the facilitator, participants, and the relationship between facilitator and participants

could impact on intervention effects. As Roeser, Eccles, and Strobel (1998) argued characteristics of the children will interact with characteristics of the classroom to create a reciprocal influence. Intervention effectiveness can be influenced by factors at the level of the class, or school. These factors likely contribute to the differential gain scores among classes, although, it is unclear what these factors may be. Future research examining mediating and moderating variables on intervention effectiveness will add to the literature in this area.

### 7.10. Implementation Factors

Implementation factors were mentioned in Section 3.4 and it is worth discussing their possible impact on the results further. Factors such as fidelity to intervention can have considerable effects on the outcomes achieved. Self-reported levels of fidelity were high in this study, and therefore it is likely that the study did measure the intervention programme as it was meant to be delivered.

More positive outcomes have been found when the programme was delivered or closely supervised by members of the research team (e.g. Gillham, Hamilton, Freres, Patton, & Gallop 2006). This may suggest that either the intervention is being optimally delivered in that context, or that the involvement of the researchers who have a long standing commitment to the programme may present the programme in such a way that effects not directly related to the intervention have a placebo effect which affects outcomes. In this study the researcher was also one of the developers of the programme and a facilitator for three of the psychologist-led classes, which could arguably compromise the findings, perhaps by increasing the problem of social desirability. In the current study it is likely that the dual role of the researcher as facilitator and researcher contributed to the high levels of fidelity that were found. However, it is important to note that the researcher was not the only psychologist who

delivered the intervention, there were two other psychologist facilitators, and so not all the data for the psychologist group came from a facilitator who was both an intervener and evaluator. All of the studies reviewed in Chapter 3 were also conducted by researchers who were involved in the development of the programme (see Section 3.2). Studies carried out by independent researchers would enhance the evidence-base, not only for LfL, but for universal intervention programmes generally.

### 7.11. Sustainability of Intervention

Literature from a variety of disciplines supports the idea that implementation and sustainability of an intervention can be affected by a number of factors, including: (a) personal factors, including the characteristics, attitudes, beliefs, and behaviours of those implementing the intervention; (b) factors relating to the organisational context for the intervention, including the attitudes, beliefs, and behaviours of administrators/managers and other stakeholders, as well as organisational policies, structures and procedures, and (c) the external environment of the setting implementing the intervention (Domitrovich et al., 2008; Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Forman, Olin, Hoagwood, Crowe, & Saka, 2009; Greenhalgh, Robert, Macfarlane, Bate, & Kyriadian, 2004; Ikeda, Tilly, Stumme, Volmer, & Allison, 1996; Klein & Sorra, 1996; Levenson-Gingiss & Hamilton, 1989; Rogers, 2003). The sustainability of an intervention then is an important factor in school-based interventions (Andrews & Erskine, 2001).

When interventions are implemented under "real-world" circumstances, requiring minimal training of teachers and are inexpensive to administer, there is an increased likelihood that the programme would be sustained and disseminated (Spence et al., 2003). Positive teacher perceptions of interventions also increase effective sustainability and dissemination of interventions (Spence et al., 2003).

Programmes that are difficult to implement or that require a lot of personnel or time resources are more likely to be discarded by schools (Fridrici & Lohaus, 2009). Factors that characterise potentially sustainable teacher-implemented mental health programmes include: the programme is (a) acceptable to teachers, (b) effective, (c) feasible to implement on an ongoing basis with minimal, although sufficient, resources, and (d) flexible and adaptable (Han & Weiss, 2005). It is argued here that these factors characterise LfL and thus LfL is potentially a sustainable and effective intervention that can be easily implemented in schools. Although these are important, they are not by themselves sufficient to make a programme sustainable. In turn, it is through observing the significant impact of programmes on their pupils that teachers and schools are likely to continue to implement these programmes (Datnow & Castellano, 2000; Noell et al., 1997).

Moreover, of particular importance is the relevance of LfL within the Scottish education context. As stated in Chapter 1, LfL is an intervention programme that meets the Health and Wellbeing experiences and outcomes stated in A Curriculum for Excellence (Scottish Executive, 2004a). In particular, schools are expected to support children to develop learn strategies to manage their feelings, strengthen their personal coping skills and learn skills and strategies that will support in challenging times. As a result the positive significant results found in this study and the medium-large effect sizes, along with the current curriculum that has only recently been implemented in August 2010, LfL is a highly relevant intervention programme for schools in Scotland today.

### 7.12. Strengths and Limitations of Current Study

The current study was an effectiveness study, conducted in the real world life of schools with all the class, teacher and school differences that might conceivably be

expected to influence the implementation of a novel programme across nine primary schools. The study did not meet the so-called "'gold standard' for social research" (Robson, 2002, p. 4), that is the randomised control trial. As a result, the research does not measure how the programme would work in an ideal setting (Pittler & White, 1999). However, this leads into a discussion about the importance of considering the effectiveness of an intervention, that is whether an intervention succeeds when implemented in real-life circumstances (Flay et al., 1995). Thus it is important to consider the context in which the intervention will be delivered (Adelman & Taylor, 1998). Key strengths of the current study are that it was of a potentially sustainable intervention programme, carried out in real-world settings, which still achieved large and medium effect sizes (as reported in Section 6.4.4).

The significant effects found in this study were all from self-report measures. Self-report measures are prone to social desirability response biases (Conte, 2005; Paulhus, 1991), threatening the internal validity of the study. In addition to this children's responses may be biased towards 'the here and now' rather than informative judgements covering a period of time. For example, a younger child is more likely to give a low response to an item like "I get on well with others" if they have recently fallen out with a friend, even if they typically do get on well with others (Wigelsworth et al, 2010). While it is acknowledged that social response biases may be a concern with the current study, it is also argued that children are the best informants of themselves (DiBartolo & Grills, 2006). Due to the number of participants involved in this study it was not possible to include teacher-report outcome measures as this would have been too time-consuming for the teachers to complete, which would also likely have had a negative impact on willingness to participate in the research in the first instance. The other option to address this

concern of social desirability response biases would have been for the study to include a maximal measure of behaviour. Maximal measures are time consuming to administer and score (Willhelm, 2005), and as such were beyond the scope of the current study, as well as all of the studies reviewed in Chapter 3 (with the exception of Bierman et al., 2008). Social desirability response biases are therefore a possible problem in the current study, and equally as problematic in those studies reviewed in Chapter 3. Conducting double-blind research studies may reduce this problem in the future.

For self-report measures, levels of attrition at pre- and post-intervention were low and similar across the three groups, and therefore the effect of attrition on intervention findings is minimal. Rates of attrition were higher at six month follow-up. As measures were delivered to whole classes, attrition was mostly due to the class teacher not administering the evaluation measures. Although it was possible that teachers in the intervention group may have been more likely to complete the evaluation measures at six months follow-up if they believed the intervention was effective, analysis of class effects found evidence that the intervention was more effective in some classes than others. Neverthless, the results of the follow-up analyses should be interpreted with the caveat in mind that attrition at follow-up was high. For the SCAS-P, high levels of attrition were found both at post- and at follow-up. It is possible that parents of those children with the highest levels of anxiety were more likely not to return the forms, or vice versa. The high level of attrition for the SCAS-P results in difficulties interpreting the validity of the results of the intervention programme on parent reports of their child's anxiety.

The study would have been strengthened by the use of a placebo or attention control group (e.g. Merry, McDowell, Wild, Bir, & Cunliffe, 2004) rather than a

comparison group who continued to receive their regular PSE curriculum. This lack of an attention-placebo control is not solely a problem of the current study as it pervades mental health intervention studies generally (Chambless & Hollon, 1998; Durlak & Wells, 1997). The inclusion of an attention or placebo control group would have allowed the current study to control for non specific factors of intervention such as teacher attention - making the time during delivery of intervention special and/or novel.

Schools volunteered to take part in the current study. It is therefore possible that staff in the participating schools may have been more enthusiastic and interested in mental health issues than is normally the case among teachers. Sampling bias is almost unavoidable in research that requires participants to volunteer, informed consent and the offer of intervention immediately separates those who are open and available to change and those who are not, on a school, class, or individual basis (see Martin, Diehr, Perrin, & Koepsell 1993). Future research should attempt to examine differences between schools who volunteered with schools that did not volunteer in order to make judgements regarding the generalisability of any findings.

It could be suggested that the reliance on self-reports of fidelity to intervention was a limitation of the current study. Similar intervention studies have used independent observers of the quality of the facilitators' delivery of the programme (e.g. Barrett & Turner, 2001) and others have recorded implementation and had the recording assessed by independent raters for fidelity to intervention (e.g. Lowry-Webster et al., 2001). However, teachers' own perceptions of their efficacy has been shown to be related to their capacity to facilitate children's own sense of efficacy and subsequent academic attainment (Midgley, Feldlaufer & Eccles 1989) and to

successful implementation of novel programmes (Stein & Wang, 1998), and so the self-report measure of fidelity is not considered a limitation of this study.

A final concern is the phenomenon of regression towards the mean. Regression towards the mean is a statistical phenomenon whereby extreme high scores decrease on second measurement, and extreme low scores increase. This can provide the illusion of benefit of intervention. Regression to the mean would impact both the intervention and comparison groups similarly on emotional literacy and anxiety as there were no differences between the groups on these measures at intervention start. However, this was not the case and so it was more likely that the changes found in the intervention groups on anxiety and emotional literacy are effects of the intervention itself rather than regression to the mean. Significant differences between the groups were found on the coping skills subscales at intervention start. The psychologist-led group were significantly higher in pre- avoidance skills than the teacher-led and comparison groups, the comparison group were significantly higher than the teacher- group on problem-solving skills, and the psychologist- group were significantly higher in seeking social support coping skills than the comparison. Regression to the mean was more likely to account for the results between these groups where there were significant differences at intervention start. On each of the three coping skills subscales there was one intervention group (i.e. either the psychologist- or teacher-led group) that did not differ from the comparison group at intervention start, and so regression to the mean could not account for the significant effect favouring one of the intervention groups on each of these subscales. Therefore, there still remained a significant intervention effect for one of the intervention groups compared with the comparison group on each of the three coping skills subscales that could not be due to regression to the mean.

### 7.13. Implications for Future Research

This study did not assess the impact of mediating or moderating variables on outcomes. It is possible that participating in the programme as a whole class had an impact on classroom variables such as class ethos, supportiveness and relationships. There is evidence to suggest that climate within schools influences pupil adjustment and wellbeing (e.g. Kupersmidt & Coie, 1990; Roeser et al., 1998; Way, Reddy & Rhodes, 2007), with these models postulating that it is the children's perceptions of the climate that is most relevant for understanding wellbeing (e,g, Eccles et al., 1993). Hughes (2000) suggested that identifying and understanding the mechanisms behind the change of specific intervention programmes is important to allow practitioners to adapt the programme to different environments, thus increasing the probability of success.

Similar studies have evaluated interventions in terms of impact on self-esteem (e.g. Stallard et al., 2005; Stallard et al., 2007) and self-concept (Kimber et al., 2008a,b). Although research has found a relationship between positive self-concept and school achievement, the global nature though of concepts such as self-esteem and self-concept and associated difficulties with definition and measurement (Shavelson, Hubner, & Stanton, 1976) have resulted in alternative ways of encapsulating the specific nature of the relationship between people's beliefs about themselves as learners and learning outcomes (Burden, 1994). Attribution theory (e.g. Dweck, 1975, 1986; Frieze, 1980; Weiner, 1979, 1985) is therefore relevant in exploring people's beliefs and their relationship to outcomes. If success is attributed to ability and failure to lack of effort, individuals are more likely to continue to be motivated to succeed, whereas, if failure is attributed to lack of ability and success attributed to luck, poor motivation is likely to follow. Continued experiences of these less helpful attributions

can result in children developing a sense of learned helplessness and increased likelihood to give up trying to learn (Burden, 1994).

In Weiner's (1985) model of achievement motivation it is argued that there is close link between learning, emotion and motivation, and that it is the attributions that are the key mediating variables (Toland & Boyle, 2007). Attribution intervention research (e.g. attribution retraining) has focused on the relationship between attributions and academic achievements in education (e.g. Forsterling, 1985; Mujis, 1997; Toland & Boyle, 2007). The three components of internality, controllability and stability account for all human attributions (Burden, 1994; Weiner, 1979). Attributions then could be an important factor both in the development of anxiety disorders, and in motivation to cope with problems. Given their close link with emotion and motivation, it is suggested here that attributions may also be a mediating factor worth investigation in mental health intervention studies.

Future research investigating individual factors such as intelligence, attendance at sessions, completion of home-work, children's motivation and attributions, and environmental factors such as peer pressure, parent participation and classroom layout for example may provide important information regarding how interventions can be modified to best suit the school curriculum (Lock & Barrett, 2003). Testing factors such as these as moderators or mediators of outcomes will enhance knowledge about what aspects are required for programme effectiveness. Similarly, the systematic assessment of fidelity of intervention implementation, as well as quality of implementation will support understanding of what implementation factors are essential; in delivering universal mental health interventions in schools.

Participants in the current study were nested within classes, which were in turn nested within schools. It was argued in Section 3.3.4 that as variances between

schools are four times greater than variances between classes (Brown & Liao, 1999), randomisation at the level of the class reduces possible confounding variables that may account for the results to some extent. This did not remove though any variables that could be due to the class (e.g. classroom ethos). Future research studies where randomisation is at the level of the class should seek to recruit a sample size that will allow for the use of multi-level modelling analyses. This will allow for studies to identify more fine-grained teacher, classroom, or school level differences, such as the ethos of the school, interpersonal skills of the teacher, or cohesiveness of the class group.

The current study only considered the effectiveness of the intervention programme on global individual differences at post-intervention and at six month follow-up. It did not consider what changes may have occurred due to the process of intervention, for example, how individual pupils' behaviour changes over time in response to stressful situations, or how class relationships changed throughout the duration of the intervention, and the resulting impacts on global differences in anxiety, coping etc. The research methods employed in the main study were quantitative. However, a mixed-methods approach (i.e. a research strategy that uses more than one type of research method) could help identify the process of intervention.

The pupil diaries that were used in the pilot study (see Sections 5.1.4.5 and 5.2.4) were attempts at examing the application of skills taught, however, were not found to be useful. Perhaps interviews with some pupils, parents and facilitators after the intervention was finished would help explore what factors are important in the process of interventions such as LfL, which would then support future developments and implementations of intervention programmes. Future evaluations of intervention programmes should consider adapting a mixed-methods approach in order to consider

not only global changes at the end of the intervention programme, but also further valuable information regarding the impact of the process of the intervention over time and changes to pupil behaviour and coping.

### 7.14. Implications for the Role of the Educational Psychologist

The current research was carried out by an Educational Psychologist working in a local education authority. The intervention programme, LfL, was also developed by Educational Psychologists working within a local education authority. As was argued in Chapter 1, mental health interventions need to be delivered in settings readily accessible to children and young people, and many of the young people requiring support for anxiety disorders do not attend any agency (Zubrick et al., 1997). Educational Psychologists then are in a somewhat unique position to support the promotion of positive mental health and prevention of mental health problems among children and young people.

Within Scotland there are five core functions of Educational Psychologists: consultation, assessment, intervention, training, and research and development (Scottish Executive, 2000). The current study is an example of research and development work, that Educational Psychologists might be involved in, as well as an intervention. Developing, implementing, evaluating intervention programmes as well as critically analysing the research base of interventions that are already being delivered in schools are key tasks where Educational Psychologists can support the local education authority. Providing consultation and advice at a case work level, as well as at local and national government levels, are also roles of the Educational Psychologist in relation to promotion and prevention in mental health. Providing training to schools and other agencies working with children and young people is

already part of the role of the Educational Psychologist, which can be extended to include issues relating to mental health.

This current work demonstrates that mental health does not only need to be the role of health professionals, and indeed, Educational Psychologists can make valuable contributions to the promotion and prevention of mental health. Educational Psychologists do not need to undertake this task solely. In an ever increasing context of integrated children services in line with policies such as Getting It Right for Every Child (Scottish Executive, 2006) Educational Psychologists are regularly working in multi-agency contexts and therefore can work jointly with colleagues in Social Work Services, Child and Family Mental Health Services and Primary Mental Health Teams for example in order to promote children and young people's wellbeing and prevent mental health problems.

### 7.15. Conclusion

Both nationally and internationally there has been an increasing focus on promoting positive mental health and reducing mental health problems, and the role of schools in doing so. This study argued that by targeting social emotional competence, coping skills and anxiety through a universal intervention delivered to whole classes, that children's wellbeing would be promoted and mental health problems reduced.

LfL, a universal intervention programme was delivered to classes by psychologists or teachers, and compared to comparison classes who continued to receive their normal PSE curriculum. The results of the current study were consistent with other universal intervention studies measuring social and emotional competence, children's levels of emotional literacy were increased following LfL in the intervention group when compared to the comparison group. Coping skills were also improved for participants. Previous studies have tended to find that only aspects of

coping skills were improved following intervention (e.g. only non-productive coping but not productive coping). However, participants in the intervention groups significantly improved in all aspects of coping skills compared to those in the comparison group.

Of particular importance, the results of the current study in reducing levels of anxiety were strong, with intervention pupils significantly reducing in anxiety compared to comparison pupils, with effect sizes in the medium-large range. Furthermore, children who were classified as being "at risk" at intervention start were significantly more likely to no longer be at risk at either post-intervention or six month follow-up in the intervention group compared with the comparison group.

Sustainability has been argued to be almost as important as effectiveness for mental health interventions in schools. Psychologists and teachers were found to be equally effective facilitators of the intervention programme, which could easily be implemented with fidelity and minimal training and support from the programme developers. As a result, LfL is potentially an effective, sustainable, intervention that has evidenced improvements in children's mental health through the promotion of social emotional competence and coping skills, and the reduction in levels of anxiety.

Further independent replications, and longitudinal evaluations would enhance the evidence base for LfL. In order to understand the factors associated with effectiveness and good quality implementation, future research examining mediating and moderating variables is required. This future research will ensure that the programme continues to promote children's positive mental health and reduce mental health problems.

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## 6. Appendices

1. Excluded studies
2. Intervention group consent letter
3. Comparison group consent letter
4. Overview of Lessons for Living: Think well, do well
5. Treatment acceptability questionnaire

## Appendix 1

**Excluded Studies**

| Authors | Intervention Programme | Reason for Exclusion |
|---|---|---|
| Dadds, Spence, Holland, Barrett, & Laurens (1997) | The Queensland Early Intervention & Prevention of Anxiety Project | Not a universal implementation |
| Kendall (1994) | Coping Cat | |
| Dadds et al. (1999) | The Queensland Early Intervention & Prevention of Anxiety Project | |
| Barrett, Dadds, & Rapee (1996) | CBT & Family CBT | |
| Barrett, Duffy, Dadds, & Rapee (2001) | | |
| Rapee, Kennedy, Ingram, Edwards, & Sweeney (2005) | Parent-education programme | |
| Jaycox, Reivich, Gillham, & Seligam (1994) | Penn Resiliency Programme (PRP) | |
| Masia-Warner et al. (2005) | School-based intervention for social anxiety disorder | |
| Cardemil, Reivich, Beevers, Seligman, & James (2007) | PRP | Specific group |
| Cerdemil, Reivich, & Seligman (2002) | | |
| Greenberg & Kusche (1998) | Providing Alternative THinking Strategies (PATHS) | |
| Cook et al. (2008) | Social skills training | |
| Chiang, Ma, Huang, | Relaxation-breathing | |

| | | |
|---|---|---|
| Tseng, & Hsueh (2009) | training | |
| Barrett, Sonderegger, & Xonos (2003) | Friends for Life (FfL) | |
| Conduct Problems Prevention Research Group (1999) | PATHS | No relevant outcome measure |
| Merry et al. (2004) | Resourceful Adolescent Programme (RAP) | |
| Clarke, Hawkins, Murphy, & Sheeber (2003) | 2 x primary prevention depression interventions | |
| Dolan et al. (1993) | Good Behaviour Game & Mastery Learning | |
| Poduska et al. (2008) | Good Behaviour Game | |
| Slavens & Slavin (1995) | The Cooperative Elementary School | |
| Quayle, Dzuirawiec, Roberts, Kane & Esbworth (2001) | PRP | |
| Chaplin et al. (2006) | | |
| Caremic, Reivich & Seligman (2007) | | |
| Cutuli (2004) | | |
| Cutuli, Chaplin, Gillham, Reivich & Seligman (2006) | | |
| Gillham et al. (2007) | | |
| Jerusalem & Hessling (2009) | Self-efficacious Schools & Fostering Self-efficacy & self-determination in class | No information on study design |
| Hromek & Roffey (2009) | Using games to promote social emotional learning | No information on design/ not an evaluation study |
| Catalano et al. (2003) | Raising Healthy Children | Teacher & parent intervention in addition to |

| | | |
|---|---|---|
| | | pupil intervention |
| Cardemil, Kim, Pinedo, & Miller (2005) | Family Coping Skills Programme | Family intervention, not pupils |
| Niles, Reynolds, & Roe-Sepowitz (2008) | Chicago Child-Parent Centre Preschool Programme | Family & pupil intervention |
| Stallard et al. (2005) | FfL | No control group |
| Stallard, Simpson, Anderson, Hibbert, & Osborn (2007) | | |
| Huxley et al. (2007) | Best of Coping | |
| Luscombe-Smith et al. (2003) | | |
| Bugalski & Frydenberg (2000) | | |
| Muris et al. (2001) | RAP | |
| Franze & Paulus (2009) | MindMatters in Germany | |
| Elias, Gara, Schuyler, Branden-Muller, & Sayette (1991) | Improving Social Awareness – Social Problem Solving Project | Retrospective study |
| Monkevicience, Mishara, & Dufour (2006) | Zippy's Friends | No pre-intervention measures, not an evaluation study |

## Appendix 2

**Intervention Group Consent Letter**

Dear Parent,

As part of the Personal and Social Education (PSE) curriculum, your child's class are soon to start working through a programme entitled *"Lessons for Living: Think well, do well*". This programme is aimed at promoting children's emotional well-being and was developed by Educational Psychologists from South Lanarkshire Council Psychological Services. The programme will be implemented by (class teacher, supported by classroom assistant) or (Psychologist, supported by class teacher)

One of the developers of the programme, Sabrina Collins, is currently undertaking a Doctorate in Educational Psychology at the University of Strathclyde and will be evaluating the effectiveness of this programme as part of her research in fulfilment of this degree. Detailed information about Sabrina's research can be found in the attached "Research Information Sheet".

All personal information gathered from pupils and parents will only be used for the purpose of the evaluation, will be strictly confidential and will only be seen by Sabrina. Please note that should you not provide consent for your child to take part in this evaluation they will not be disadvantaged and will still work through "*Lessons for Living: Think well, do well"* with the rest of their class. In addition, you are free to withdraw your consent at any point and any information gathered relating to your child will be destroyed.

Please read the attached information sheet and return the tear off slip below to your child's class teacher indicating whether or not you consent to your child taking part in the evaluation of this PSE programme.

Yours sincerely

(Head Teacher)

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Pupil Name: _____ Class Teacher:_____

Please tick:

☐ I consent to my child taking part in the evaluation of the PSE programme

☐ I do not consent to my child taking part in the evaluation of the PSE programme

Signed: _____ Print Name: _____

**Research Information Sheet**

*An Evaluation of Lessons for Living: Think well, do well*

The research is being carried out by Sabrina Collins, Educational Psychologist, South Lanarkshire Psychological Service, Station Road, Blantyre.

Sabrina is being supervised by Dr. Lisa Woolfson, Reader, Director of Doctorate in Educational Psychology, Department of Psychology, University of Strathclyde, 40 George St, Glasgow

**Aims & Objectives of Research**

The aim of the proposed research is to implement and evaluate a mental health promotion programme for children aged 9-12 years. The programme is an updated and restructured version of *Lessons for Living* (Waters, 1998), a structured approach to the promotion of emotional intelligence for children and young people. The L*essons for Living: Think well, do well* programme will has been revised taking into account the recent evidence base in the area of prevention and promotion in mental health.

It is anticipated that *Lessons for Living: Think well, do well* will increase pupils' levels of emotional intelligence, coping skills and reduce their levels of anxiety.

**Evaluation of *Lessons for Living: Think well, do well***

All pupils taking part in the evaluation research will complete each of the following at three points (immediately before intervention, immediately after intervention and at 3 months post intervention):

- The Baron Emotional Quotient Inventory, youth, short version
- The Coping Strategy Indicator
- The Spence Children's Anxiety Scale
- Spelling test

In addition, parents will be asked to complete the Spence Children's Anxiety Questionnaire (parent version) at each of the three points.

Although pupils' names will be on each questionnaire, all data collected will be coded, anonymised, and only identifiable by the researcher. All data will only be used for the purpose of the evaluation. Confidentiality and anonymity will be maintained. All information collected will be stored securely within Psychological Services.

Consent to take part in the evaluation can be withdrawn by parents at any time. In that event, any data arising from your child's participation will be destroyed, unless you specifically state at that time that the data may be retained.

If you require further information about this research evaluation, please contact:

Sabrina Collins
Educational Psychologist

## Appendix 3

**Comparison Group Consent Letter**

Dear Parent,

An evaluation of the Personal and Social Education curriculum is being undertaken by Sabrina Collins, Educational Psychologist and doctoral student at the University of Strathclyde.

Please read the attached information sheet and return the tear off slip below to your child's class teacher indicating whether or not you consent to your child taking part in the evaluation of their PSE programme.

All personal information gathered from pupils and parents will only be used for the purpose of the evaluation, will be strictly confidential and will only be seen by Sabrina.

Please note that you are free to withdraw your consent at any point and any information gathered relating to your child will be destroyed.

Yours sincerely

(Head Teacher)

---

Pupil Name: _____ Class Teacher:_____

Please tick:

☐ I consent to my child taking part in the evaluation of the PSE programme

☐ I do not consent to my child taking part in the evaluation of the PSE programme

Signed: _____ Print Name: _____

**Research Information Sheet**

*An Evaluation of Lessons for Living: Think well, do well*

The research is being carried out by Sabrina Collins, Educational Psychologist, South Lanarkshire Psychological Service, Station Road, Blantyre.

Sabrina is being supervised by Dr. Lisa Woolfson, Reader, Director of Doctorate in Educational Psychology, Department of Psychology, University of Strathclyde, 40 George St, Glasgow

**Aims & Objectives of Research**

The aim of the proposed research is to evaluate the current Personal and Social Education curriculum compared with another intervention programme.

**Evaluation of *Lessons for Living: Think well, do well***

All pupils taking part in the evaluation research will complete each of the following at three points (immediately before intervention, immediately after intervention and at 3 months post intervention):

- The Baron Emotional Quotient Inventory, youth, short version
- The Coping Strategy Indicator
- The Spence Children's Anxiety Scale
- Spelling test

In addition, parents will be asked to complete the Spence Children's Anxiety Questionnaire (parent version) at each of the three points.

Although pupils' names will be on each questionnaire, all data collected will be coded, anonymised, and only identifiable by the researcher. All data will only be used for the purpose of the evaluation. Confidentiality and anonymity will be maintained. All information collected will be stored securely within Psychological Services.

Consent to take part in the evaluation can be withdrawn by parents at any time. In that event, any data arising from your child's participation will be destroyed, unless you specifically state at that time that the data may be retained.

If you require further information about this research evaluation, please contact:

Sabrina Collins
Educational Psychologist

## Appendix 4

**An Overview of Lessons for Living: Think well, do well**

Lessons for Living: Think well, do well is a ten session intervention programme which aims to help children, aged 9-12 years, develop the knowledge and understanding, skills, capabilities and attributes which they need for mental, social and emotional wellbeing now and in the future.

It supports pupils in increasing their emotional awareness and coping skills, by teaching them a range of strategies that they can use to support them with problems that they are in control of, as well as strategies they can use for problems which they are not in control of. More detail of the programme is detailed below.

Lesson 1

- Discussion about team work and setting ground rules for LfL.
- Introduction to the aim of LfL and the concept of developing a 'coping toolbox'
- Introduction to breathing and the longs, specifically abdominal stomach breathing, full lung breathing and chest breathing.
- Diagnostic breathing test to help pupils experience different breathing styles and their style of breathing at any point in time.

Lesson 2

- Using the 'Ups and Downs Scale' to notice current mood and changes (i.e. rating on a scale of 1-5 current feeling from miserable/terrible through to brilliant/fantastic).
- Identifying physiological clues our bodies give us about how we are feeling.
- Practising stomach breathing to develop relaxation skills.
- Developing relaxation skills to include centring in a seated position.
- Introducing imagery into relaxation.

Lesson 3

- 'Cupped hands' technique to prevent panic attack.
- Progressive muscle relaxation.
- Developing emotional vocabulary by brainstorming words and phrases used to describe feeling happy, sad, angry and worried.
- Making the link between feelings and behaviour – how do you behave when you feel (angry/happy/sad/worried).
- Role play behaviours associated with feelings to illustrate the same behaviour can be indicative of different feelings.

Lesson 4

- Introduction of 'thoughts' into the relationship between feelings and behaviour.
- Using photographs to identify possible feelings and thoughts.
- Using photographs to identify thoughts, feelings and behaviours.

- Progressive muscle relaxation – physically tensing and relaxing muscles and then doing this mentally.

Lesson 5

- Progressive muscle relaxation – choice of physical or mental.
- Introduction to 'more helpful' versus 'less helpful' thinking.
- Positive self-talk statements.
- Using photographs to change less helpful thoughts into more helpful thoughts, while identifying the feelings and behaviours associated with each.
- Personal coping tool – the DVD technique. Visualisation technique whereby pupils imagine they are watching a DVD of themselves of the current day. Rewind and play back parts that they enjoyed. Rewind and change parts that they did not enjoy.

Lesson 6

- Practice stomach breathing.
- 'The traps and triumphs' technique – visual illustration about how ignoring problems and wishful thinking does not help (stuck in the 'trap') and how by thinking about a worry differently (more helpful thought) can change the feeling and behaviour.
- Differentiation between controllable and uncontrollable problems.
- Personal coping tool – the safe box. Visualisation technique whereby pupils write or draw all their worries and place them in the safe box, to allow them to put them out of their mind and worry about them later.

Lesson 7

- Practice the lake image.
- Being a detective with your thoughts – finding the evidence.
- Generating more balanced alternative thoughts.
- Personal coping tool – the safe place. Visualisation technique whereby pupils imagine being in a favourite place of safety where they feel happy and relaxed.

Lesson 8

- Practice progressive muscle relaxation (physical version).
- Using the problem solving plan for controllable problems or worries.
- Practice favourite personal coping tool.

Lesson 9

- Practice progressive muscle relaxation (mental version).
- Self-assessment of all the tools learned and how helpful each tool was.
- Reviewing what was learned.
- Time for yourself activities and support teams.
- Personal coping tool practice.

Lesson 10

- Relaxation or personal coping tool practice.
- Writing advice letters/posters to peers in response to coping with problems, using tools learned in LfL.
- Class discussion – how to take LfL forward as a class, now that the programme has finished.

## Appendix 5

### Treatment Acceptability Questionnaire

*Lessons for Living:*
*Think well, do well*

1. How much did you enjoy Lessons for Living: Think well, do well? Please circle your answer.

| | Not at all | | Okay | | A lot |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | |

2. How helpful have you found Lessons for Living: Think well, do well? Please circle your answer.

| Not at all helpful | | | Okay | | Very helpful |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | |

3. How often do you use the tools you learned in Lessons for Living outside of the Lesson?

| Never | | sometimes | | A lot |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

4. Would you recommend Lessons for Living: Think well, do well to a friend? Please circle.

YES / NO

5. How would you describe Lessons for Living to a friend?

_____

6. What has been the most helpful thing you have learned in Lessons for Living?

_____

7. What would you change about Lessons for Living to make it more helpful?

_____

8. How confident are you that you will continue to use the tools you learned in Lessons for Living now that the programme is finished?

| Not at all Confident | | A little confident | | Very confident |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |