

A multi-level approach to assessing the impact of Social & Emotional Learning: Secondary SEAL

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Abstract

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A multi-level approach to assessing the impact of Social Emotional Learning: Secondary SEAL

Despite an expanding interest in the concept of Emotional Intelligence (EI), difficulties in definition, measurement and reconciling competing models has led to an argument that the practical application of EI has overtaken current levels of understanding and research (Matthews, Roberts, & Zeidner, 2004a; Zeidner, Roberts, & Matthews, 2002). This is particularly relevant within education where a large range of social and emotional learning (SEL) programmes, designed to increase EI in pupils, vary drastically in their intended outcomes and methods, quality of material and the frequency and quality of evaluation (Hoffman, 2009). To date, the majority of research has been US based and the small quantity of UK research has been focused either at the primary level, or has assessed the perception of impact. This means the potential success for SEL to positively improve UK secondary aged pupil outcomes is untested.

The aim of the current study was the assessment of the SEAL programme, a National Strategy for English secondary schools designed to positively influence a range of pupil outcomes, including increased emotional literacy, better behaviour and improved mental well-being. Additionally, the validity of the underlying relationship between EI and favourable outcomes, beyond identified socio-demographics, was measured. The study utilised a predominately quantitative design with a final sample of 22 schools (approximately 2360 pupils) implementing the SEAL programme, and 19 'matched comparison' schools (approximately 1991 pupils), selected on the basis of similar school level characteristics. Pupils from every school completed annual self-rated assessments of their emotional literacy (using the ELAI), mental well-being and pro social behaviour (using the SDQ) over a three year period. A small case study element (9 SEAL Schools) was selected from the larger quantitative sample to provide context to the quantitative results. Multi-level modelling (a statistical technique for examining hierarchically clustered data) was used to analyse the results.

After controlling for socio-demographic factors, results indicated a marginal non-significant effect in pupil's emotional literacy and mental health difficulties as a result of attending a SEAL school, however no effect on pro social behaviour was found. Results also indicated a differential effect on the basis of the pupil variables of SEN provision, gender and ethnicity, which was consistent with very little variation at school level reported. A significant relationship was found between emotional literacy, mental health difficulties and pro social behaviour, indicating a valid theoretical framework, despite the lack of a significant effect of the SEAL programme. Further examination revealed that the relationship between the variables may be more complex than originally theorised, although difficulties with high degrees of confound between the factors limit this interpretation. Implications and directions for future research are also discussed.

Declaration of original contribution

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Dedications and thanks

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Publications of author

Humphrey, N. Kalambouka, A. Wigelsworth, M. & Lendrum, A.. (in press) "Measures of social and emotional skills for children and young people: a systematic review" *Educational and Psychological Measurement*

Humphrey, N. Wigelsworth, M. (in preparation) "Modelling the relationship between children's social and emotional competence and their mental health difficulties: An exploratory study" *Journal of Child Psychology and Psychiatry*

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Abbreviations

General Terms

EI = Emotional Intelligence

NPD = National Pupil Database

SEL = Social Emotional Learning

SEN = Special Educational Needs

RCT = Randomised Control Trial

Policy Documents

ECM = Every Child Matters

Methodological Acronyms

ANOVA = Analysis of Variance

ELAI = Emotional literacy Assessment and Intervention battery

ICC = Inter Cluster Co-efficient

MANOVA = Multiple Analysis of Variance

MCAR = Missing Completely At Random

MLM = Multi Level Modelling

SDQ = Strengths and Difficulties Questionnaire

School Roles

B&A Consultant = Behaviour and Attendance Consultant

LA = Local Authority

SENCO = Special Educational Needs Co-ordinator

TA = Teaching Assistant

Programmes

DARE = Drug Abuse Resistance Education

PATHS = Promoting Alternative THinking Strategies

SEAL = Social & Emotional Aspects of Learning

SEBS = Social, Emotional and Behavioural Skills

Organisations

CASEL = Collaboration for Academic, Social and Emotional Learning

DCSF / DfES = The Department for Education and Skills (DfES) became the Department for Children, Schools and Families (DCSF) in July 2007. References to the DfES and DCSF are used synonymously throughout this report. From 2010 this department is now referred to as the Department of Education (DOE).

IPPR = Institute for Public Policy Research

NfER = National Foundation for Educational Research

OFSTED = Office for Standards in Education

1

1 What is emotional intelligence and why is it important for social and emotional learning?

“Emotional intelligence is a product of two worlds. One is the popular culture world of best-selling books, daily newspapers and magazines. The other is the world of scientific journals, book chapters and peer review.” (Mayer, 1999 p. 50)

1.1 Introduction

In the past twenty years Emotional Intelligence (EI) has emerged as one of the most publicised and contentious aspects of psychological research in both the academic and mainstream literature (Matthews, Zeidner, & Roberts, 2004b). During this time, popular versions of the construct (known as mixed models of EI) have enjoyed a successful position as a theorised construct responsible for success in a variety of arenas such as management & workplace relations (Goleman, 2004), self-help (Stein, 2006) and education (Zins, Bloodworth, Weissberg, & Walberg, 2007). The widespread public interest in EI is evidenced by the large number of websites, book sales and training programmes devoted to the purpose of promoting EI as the key to a variety of benefits including better mental health (Durlak & Wells, 1997), improved social relations (Elias & Weissberg, 2000) and improved academic success in schools (Goleman, 1995). It has even been reported (on the front cover of TIME magazine) that EI is the, *“best predictor of life success”* (Gibbs, 1995) and that EI is *“as powerful, and at times more powerful, than IQ”* (Goleman, 1996 p. 34).

One arena in which EI has made a significant impact is education, where a variety of programmes have been designed and adapted to impart EI skills to pupils, in an effort to reap a variety of favourable outcomes such as better behaviour, lower stress and anxiety and increased academic attainment (Department for Education and Skills, 2007a).

Despite such fantastical claims, the popularity of EI in the mainstream press is matched by an equally controversial reputation in the academic literature. The validity of claims that 'high EI' is responsible for the aforementioned favourable outcomes and even the validity of the EI construct itself has been criticized on several grounds including lack of consensus for a working definition of EI (Mayer & Cobb, 2000b), failure to discriminate from existing personality traits (Mayer, Salovey, & Caruso, 2000b) and lack of empirical support (Mayer, Salovey, & Caruso, 2004). Many of the critics of the mainstream conceptualisation of EI support an alternative framework (known as the ability model), which, although mainly unknown in the public arena, is characterised by an arguably more rigorous approach in its validation and subsequently has much narrower potential outcomes in its practical application (see section 2).

An additional difficulty in establishing a consensus has been the use of the phrase "Emotional Intelligence" as a flagship for the popularisation of a variety of loosely related concepts all united under the same name. Amazon.com lists over 11,000 different titles which include the phrase "Emotional Intelligence", including "*Golf Improvement through Emotional Intelligence*" by Angelo Boy (2007) and "*Smart Fats: How Dietary Fats and Oils Affect Mental, Physical and Emotional Intelligence*" by Michael Schmidt (1997).

Although an expansive and diverse collection of popular literature has served to popularise the concept of EI in the public arena, studies and writings which lack the level of rigour expected of academic research are being used as authoritative proof for some of the more speculative aspects of EI. The contribution to knowledge from these texts or simply their contribution to establishing a working definition of the term 'Emotional Intelligence' is at best highly questionable and at worst significantly damaging.

This has served to create a two tier system of knowledge and understanding between popular and academic literature (Mayer, 1999), as described in the quote at the beginning of the chapter. As a result of academic and popular conceptualisations of EI being grouped together using the same terminology, efforts have been made (especially in educational practitioner material) to differentiate between sources by creating a variety of closely related terms. For example, the DfES publication "*Promoting Emotional Health and Well-Being through the National Healthy School Standard*" (Department for Education and Skills, 2004) uses the phrases "*emotional health and well-being*" (p. 1), "*emotional intelligence*" (p. 4) and "*emotional literacy*" (p. 10) seemingly interchangeably. However, this splintering of terms can be seen to

confuse an already complicated system of classification and is further complicated by the presence of overlapping systems of categorisation (Petrides and Furnham, 2001). It is clear that at present that establishing a clear working definition of what is meant by EI is a complex matter.

As the suitability to potentially develop, teach and learn EI is thoroughly dependent on the particular model of emotional intelligence being referred to, it is important to establish a conclusive working definition. Therefore in an attempt to provide some clarity in the terms used in both the available material and this thesis, a common vocabulary is now briefly discussed.

1.2 Terminology

1.2.1 Emotional literacy

“Emotional literacy may be defined as the ability to recognise, understand, handle and appropriately express emotions” (Sharp, 2001 p. 1)

Attributable to the title of a self-help book (Steiner & Perry, 1997), the term ‘emotional literacy’ has been adopted by a number of organisations. For instance, Weare (2004) describes the development of an ‘emotionally literate’ school. The term is also used by educational practitioners as the use of the suffix ‘literacy’ is more meaningful in an educational context than similar terms and has appeal to educational practitioners and associated publishers who target this market as it implies a singular, teachable concept (unlike the term ‘intelligence’). However by doing so, the term also implies that emotional literacy is ‘within child’ and requires explicit teaching and assessment (similar to that of traditional literacy) in order to develop.

1.2.2 Emotional competence / skills

“The demonstration of self-efficacy in emotion-eliciting social transactions” (Saarni, 2000, p. 68)

The use of the words ‘competencies’ and ‘skills’ often arise in the literature regarding the teaching and learning of EI and are closely related to the phrase ‘emotional

ability'. This term implies the application of a skill in applying knowledge of emotional expression and regulation in achieving a desired outcome (such as increased self-efficacy in emotional regulation). Inclusion of the term 'self-efficacy' in the definition indicates that emotional skills are defined by an individual's self-perception of their own competency. This suggests that this term also considers emotional skills to be 'within' an individual. A large body of literature (Halberstadt, Denham, & Dunsmore, 2001) is devoted to creating models which closely resemble those of EI, and there is significant overlap. However models of social and emotional competence downplay the role of intelligence (Halberstadt et al., 2001).

1.2.3 Emotional resilience

"The ability to recover rapidly after experiencing some adverse experience" (Bar-On & Parker, 2000, p. 81)

Bar-On (2000) establishes a link between emotional resilience and EI by stating *"Resilience is a consequence of emotional competence"* (page 81). In this regard, emotional resilience is seen as one of the number of beneficial outcomes of EI; however this term is confused with both EI and mental health in a number of texts, (e.g. McKay et al. (1997)).

1.2.4 Social and emotional well-being

Social and emotional wellbeing is identified as part of overall 'psychological well-being' and is the terms used in several National Health and educational policy documents (Department for Health, 2004) as well as in the SEAL materials (see 1.5). Although the concept of wellbeing appears a universally positive concept, what such a definition actually entails is less clear. Although several authors offer various models of what well-being might include, such as satisfaction, self-esteem, energy, anxiousness (Konu, Lintonen, & Rimpela, 2002), or the experience of positive emotions (Martin & Huebner, 2007), it is likely such a term is used in order to be deliberately vague to provide a 'cover-all' for all things positive.

In comparing the various definitions used by authors, organisations and practitioners, there seems to be a consensus that emotional intelligence / competency / skill / wellbeing is amenable to being developed or influenced by outside agencies. For

instance, skills being taught or practised in school. All definitions also seem to suggest that the ability to express desirable attributes is inherent to the skills of the child. However, despite this overlap, there does not appear to be a singularly acceptable description or definition (Mayer, 1999).

For the purposes of clarity, a definition of EI or “*emotional competence*” (p. 5) which bridges the variety of terms discussed is provided by Weare (2004):

“The ability to understand ourselves and other people, and in particular to be aware of, understand and use information about the emotional states of ourselves and others with competence” (p. 2)

This definition has the advantage of highlighting both the inter-personal (competencies that require interaction with other individuals, such as displaying empathy) and intra-personal (competencies that are ‘within’ an individual, such as managing feelings) nature of EI, and is also the current working definition employed in the SEAL school materials (Department for Education and Skills, 2007a) (see section 1.5).

1.3 Terminology used within the current thesis

Given the difficulty in establishing a common consensus with which to apply an appropriate terminology, the current thesis acknowledges the use of different terms from various authors and this is reflected in the following chapters. Throughout the thesis, the term ‘emotional intelligence’ (EI) is used in reference to psychological frameworks, and the term emotional literacy is used to describe change in pupils, consistent with the measurement tool used (see section 4.7). Use of the term ‘skills’, ‘resiliency’ ‘competencies’, or ‘wellbeing’ in the current thesis are in reference to a particular authors work being cited.

1.4 Social & emotional skills in education

The increased awareness in EI and its potential for favourable outcomes has a particular emphasis in education (Park, 1999; Salovey & Sluyter, 1997; Zins et al., 2007). Several authors claim that EI based competencies are actually a pre-requisite to accessing more academic based curricula (Elias, Zins, Weissberg et al., 1997;

Romasz, Kantor, & Elias, 2004). Therefore, much of the current debate surrounding EI focuses on its application in the education sector, as a variety of school based interventions exist that are designed to enhance pupil and staff EI. These programmes operate under the title 'Social and Emotional Learning programmes' (SEL), and promote the idea that the development of social and emotional skills in individuals is responsible for increased motivation, more effective learning, better interpersonal relations, greater emotional resilience, better behaviour and increased attendance at school (Cohen, 1999; Elias et al., 1997; Park, 1999).

Despite the availability and continued implementation of dozens of programmes internationally (although predominantly within the U.S.) and the aforementioned literature supporting its theoretical potential, there has been little conclusive evidence as to the success of the intended goals of the programmes (e.g. academic attainment, reduced absent rates, better behaviour) (Humphrey, Curran, Morris, Farrell, & Woods, 2007; Qualter, Gardner, & Whiteley, 2007; Zeidner et al., 2002), and even less agreement as to a successful 'recipe' or programme for teaching EI skills (Mayer & Cobb, 2000b). As a consequence, there is a diverse application of the EI construct throughout these programmes and a sound theoretical framework to these programmes is not always established (Clouder, 2008). Additionally, studies of SEL programmes have been less than systematic with several programmes undergoing multiple evaluations and many not being evaluated at all. Many evaluations are also subject to a range of methodological criticisms (see section 3.4.4). Despite these issues, almost all these programmes share the common claim that SEL (and in association EI as an underpinning construct) is appropriate for delivering the aforementioned outcomes. The concept of EI is undoubtedly marketable; many programmes adopt the title 'SEL programme' despite a lack of EI components either as a part of the actual programme content or as an favourable outcome of implementing the intervention. These issues are discussed further in section 3.

Upon consulting the literature, one may be forgiven for dismissing EI in SEL programmes as an ill-defined, faddish 'cure-all' (Murphy, 2006). However this may be a premature reaction given the scientific origins of EI that may still offer insight into the underlying psychological frameworks governing EI skills such as social skills, empathy, recognising emotions and self-awareness. This is especially true in education where increasingly, public resources are devoted to developing and enhancing these skills. Therefore, deciding whether there is a successful 'recipe' for

teaching EI (and if so, what are its contents?) would be of benefit to academics, practitioners and policy makers alike.

1.4.1 The role of EI in the English education system

Recent Governmental policy has reflected the growing public interest in social and emotional learning by the publication of several documents that support the 'holistic' education of children in the English education system beyond the traditional focus of an academic curriculum (Department for Education and Skills, 2003, 2004, 2005).

For instance, the 'Every Child Matters' (ECM) (Department for Education and Skills, 2003) paper states the need for children to be healthy (mentally and physically), stay safe, enjoy and achieve, make a positive contribution and achieve economic well-being. Additionally, recommendations from the Institute of Public Policy Research (IPPR) include improving teaching and learning in the areas of personal and social skills in order to ensure greater access to post-compulsory education opportunities for current youth (Margo, Dixon, Pearce, & Reed, 2006).

A further example includes the report of the Teaching and Learning 2020 Review Group (Department for Education and Skills, 2006a) which states that schools of the future should ensure young people are furnished with the skills and attitudes appropriate for work-place, such as;

- Knowing how to work with others in a team
- Being resilient in the face of difficulties
- Taking responsibility, and being able to manage one's own learning
- Being confident and able to investigate problems and find solutions

(Extracted from the Report of the Teaching and Learning in 2020 Review Group, 2006)

The these reports indicate supporting social and emotional skills as part of a child's education are considered increasingly important in today's society and that development of these skills is seen as the responsibility of the school system. As relatively few resources are currently provided in this area compared to the current academic curriculum, there is a desire to introduce more emphasis on enhancing pupil's social and emotional skills, though the use of school programmes.

Secondary SEAL is the latest product of a collection of strategies supporting the holistic development of children, and is designed to integrate into existing initiatives (Department for Education and Skills, 2007a) such as the National Healthy School Programme (Department for Education and Skills, 2004), and ‘Assessment for Learning’ (Assessment Reform Group, 2002). As can be seen in Figure 1.1, the Secondary SEAL programme is preceded by similar initiatives, most notably Primary SEAL and the Social and Emotional and Behavioural Strategy (SEBS) pilot. Secondary SEAL is designed to complement the skills learned by pupils as a result of Primary SEAL (Department for Education and Skills, 2005), which is the pre-cursor to Secondary SEAL and is currently delivered in approximately 80% of primary schools (Department for Education and Skills, 2007a). Additionally, Secondary SEAL has a focus on behaviour and attendance, as the programme as originally developed as the “Social and Emotional and Behavioural Strategy (SEBS), which received two separate efficacy trials (Ofsted, 2007; Smith, O’donnell, Easton, & Rudd, 2007) before being adapted as the Secondary SEAL programme (for further details see section 3.5.1).

1.5 The Secondary Social and Emotional Aspects of Learning Programme (SEAL)

“Secondary SEAL is a comprehensive approach to promoting the social and emotional skills that underpin effective learning, positive behaviour, regular attendance, staff effectiveness and the emotional health and well-being of all who learn and work in schools. It proposes that the skills will be most effectively developed by pupils, and at the same time enhance the skills of staff” (Department for Education and Skills, 2007a, p. 4)

SEAL has adopted the model of EI proposed by Goleman (1996) as the basis of SEL learning (see section 2.4). The domains and definitions of Goleman’s mixed model of EI, which are also the goals of the SEAL programme, are presented in Table 1.1.

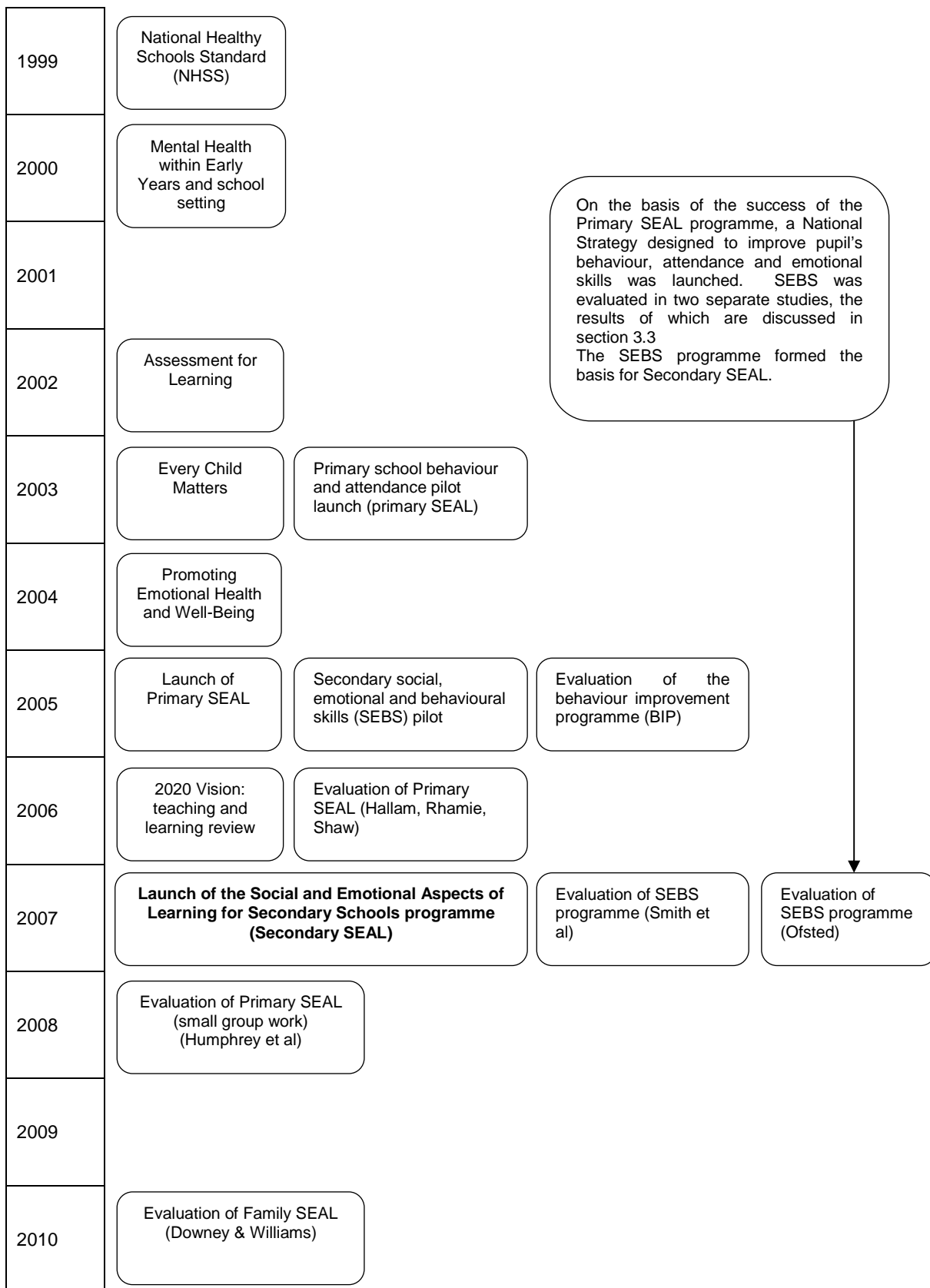


Figure 1.1 Timeline of UK Government initiatives, significant reports and evaluations concerning child mental health, wellbeing, and emotional literacy

	Skill	Definition
Inter-Personal Competences	Self-Awareness	Knowing and valuing myself and understanding how I think and feel. When we can identify and describe our beliefs, values, and feelings, and feel good about ourselves, our strengths and our limitations, we can learn more effectively and engage in positive interactions with others.
	Self-Regulation	Managing how we express emotions, coping with and changing difficult and uncomfortable feelings, and increasing and enhancing positive and pleasant feelings. When we have strategies for expressing our feelings in a positive way and for helping us to cope with difficult feelings and feel more positive and comfortable, we can concentrate better, behave more appropriately, make better relationships, and work more cooperatively and productively with those around us.
	Motivation	Working towards goals, and being more persistent, resilient and optimistic. When we can set ourselves goals, work out effective strategies for reaching those goals, and respond effectively to setbacks and difficulties, we can approach learning situations in a positive way and maximise our ability to achieve our potential
Intra-Personal Competences	Empathy	Understanding others' thoughts and feelings and valuing and supporting others. When we can understand, respect, and value other people's beliefs, values, and feelings, we can be more effective in making relationships, working with, and learning from, people from diverse backgrounds.
	Social Skills	Building and maintaining relationships and solving problems, including interpersonal ones. When we have strategies for forming and maintaining relationships, and for solving problems and conflicts with other people, we have the skills that can help us achieve all of these learning outcomes, for example by reducing negative feelings and distraction while in learning situations, and using our interactions with others as an important way of improving our learning experience.

Table 1.1 Definitions of the five social & emotional skills promoted through SEAL

The influence of Goleman’s conceptualisation of EI, and subsequently SEAL’s strategic fit with existing educational policy can be seen in Table 1.2, which compares the SEAL programmes goal with recent governmental policy outlining the vision for schools in the next decade.

Goleman (1996) / SEAL Goals	Teaching and Learning Review (2006)
Social Skills Strategies for forming and maintaining relationships, and for solving problems and conflicts with other people	Knowing how to work with others in a team
Motivation Being more persistent, resilient and optimistic	Being resilient in the face of difficulties
Self-Regulation When we have strategies for expressing our feelings ...we can concentrate better ... and work more cooperatively and productively with those around us.	Taking responsibility, and being able to manage one’s own learning
Self-Awareness When we ... feel good about ourselves, our strengths and our limitations, we can learn more effectively and engage in positive interactions with others.	Being confident and able to investigate problems and find solutions

Table 1.2 Comparison of SEAL and the teaching and learning goals

The SEAL guidance lists four main approaches towards promoting social and emotional skills in schools:

- Using a whole-school approach to create the climate and conditions that implicitly promote the skills and allow these to be practised and consolidated
- Direct and focused learning opportunities for whole classes (during tutor time, across the curriculum and outside formal lessons) and as part of focus group work
- Using learning and teaching approaches that support pupils to learn social and emotional skills and consolidate those already learnt
- Continuing professional development for the whole staff of a school.

(Department for Education and Skills, 2007a p.4)

Whole school approach

A Whole school approach means applying SEAL principles beyond individual pupils, to include structures, procedures and ethos of a school, as recommended by Weare (2000). Examples of a whole school approach include ensuring “*staff model the appropriate social and emotional skills they want pupils to learn*” (Department for Education and Skills, 2007a ,p.23) (for instance, regulating their own emotions, or showing empathy), ensuring there is an “*open and respectful climate in which staff can explore concerns and difficulties*” (p.23), or by encouraging “*a sense of ownership and shared responsibility...from the whole school community including parents and carers*” (p.24) by providing layouts and displays.

Teaching and learning

Within a whole school approach, the SEAL material also recommends providing discrete opportunities to explicitly teach social and emotional skills, for instance by reviewing and modifying the current curriculum to promote these goals. This might include using a history lesson to explore how emotions are part of the causes that shape major events, using a drama lesson to develop empathy, or using maths to discuss the positive effects of motivation and perseverance. The guidance also comes with a series of separate taught lessons and resource sheets that contain a number of activities which are designed to impart explicit skills. For instance, Figure 1.2 shows an activity in which pupils are encouraged to increase their emotional vocabulary by learning new words to describe how they are feeling.









Happy 	Angry/hateful 	Sad 	Scared 	Strong 	Weak/helpless 	Loving/caring 	Confused 
Amused	Aggressive	Deflated	Anxious	Able	Alienated	Adoring	Astonished
Blissful	Annoyed	Dejected	Apprehensive	Active	Apathetic	Affectionate	Awkward
Calm	Cross	Depressed	Fearful	Assertive	Ashamed	Benevolent	Baffled
Cheerful	Disgruntled	Despairing	Frightened	Assured	Bashful	Caring	Bemused
Comfortable	Enraged	Disappointed	Horried	Capable	Bored	Cherishing	Bewildered
Delighted	Envious	Distraught	Insecure	Certain	Defenceless	Compassionate	Disorganised
Ecstatic	Fed up	Distressed	Jumpy	Confident	Embarrassed	Concerned	Disoriented
Elated	Frustrated	Down	Panicky	Courageous	Exposed	Desiring	Disturbed
Energetic	Furious	Dreary	Patrified	Curious	Feeble	Determined	Doubtful
Fine	Greedy	Gloomy	Shaky	Determined	Fragile	Empathic	Flustered
Glad	Hateful	Grieving	Stunned	Eager	Frail	Enchanted	Harassed
Good	Hostile	Hurt	Terrified	Empowered	Frustrated	Fond	Lost
Great	Hot-tempered	Lonely	Threatened	Energetic	Guilt	Forgiving	Mixed up
Hopeful	Indignant	Loss	Timid	Enthusiastic	Humiliated	Friendly	Muddled
Joyful	Infuriated	Low	Worried	Faithful	Inferior	Generous	Nonplussed
Loving	Irate	Miserable		Forceful	Lethargic	Gentle	Perplexed
Marvelous	Irritated	Regretful		Healthy	Listless	Hopeful	Puzzled
Outraged	Jealous	Sorrowful		Interested	Lonely	Kind	Surprised
Peaceful	Livid	Unhappy		Motivated	Pathetic	Loyal	Uncertain
Playful	Mad	Upset		Optimistic	Passive	Reassured	Undecided
Pleasant	Outraged	Wistful		Positive	Powerless	Respectful	Unsure
Satisfied	Resentful	Woeful		Powerful	Sell-pitying	Sharing	Vague
Serene	'Seeing red'			Proud	Stupid	Sympathetic	
Wonderful	Seething			Resolved	Unable	Tender	
				Safe	Unfit	Understanding	
				Secure	Vulnerable	Warm	
				Truthful			

Figure 1.2 'Feelings list' - example of a SEAL activity (Department for Education and Skills, 2007b)

Continuing Professional Development

As a whole school initiative, SEAL is intended to raise awareness of the importance of social and emotional skills in all school staff, both in order to be able to deliver the skills to pupils through modelling appropriate behaviours and also to contribute to members of staff own social and emotional well-being. The SEAL guidance contains several recommendations for developing staff skills, including:

- Using systems of staff development that exist within the school, e.g. lesson observation, pairing staff to work together, shadowing, coaching, mentoring, demonstration of model lessons, etc.
- In school professional development, delivered either by staff themselves, with the behaviour and attendance consultant, with other member of children's services, or with an outside trainer.
- Setting up an in-school 'SEAL working/support group' in which staff come together to discuss and plan learning opportunities and learning and teaching approaches, review successes and solve problems
- Joining a local authority cluster group for professional development and collaborative support for learning, for example, the National Programme for Specialist Leaders in Behaviour and Attendance (NPSLBA).

(Department for Education and Skills, 2007a, p.36)

Secondary SEAL has developed since its initial rollout in 2007/8, and contains subsequent additions supporting the role of the Local Authority (LA) and additional recommended principles for schools to adhere to:

At the LA level, SEAL is currently characterised by the following values:

- Developing a 'SEAL culture' across teams and services through a shared vision, CPD, working processes and common language. Development is driven by and through the school improvement team, in true partnership with key partners, e.g. those leading on inclusion, mental health and well-being.

- Embedding and clearly communicating social and emotional skills development within Children's Services' (CS) priorities and relevant programmes.
- Social and emotional skills development strongly reflected in key strategies that run across the LA, such as Emotional Health and Well-being, Pupil Engagement, Community Safety, Safeguarding and Parenting Strategies.
- Multi-agency packages of support delivered in a range of settings that include addressing social and emotional skills, especially as a way of achieving better outcomes for vulnerable groups of children as well as an entitlement for all.
- Building capacity and sustainability through partnership working and extending links between school based staff and other CS colleagues for training. Ensuring that targeted work on social and emotional skills development is embedded in wider support systems for children.
- CS has data systems that provide evidence of impact and feed into performance management systems.

At the school level, SEAL is characterised by the additions:

- SEAL implementation is underpinned by clear planning focused on improving standards, behaviour and attendance.
- Building a school ethos that provides a climate and conditions to promote social and emotional skills.
- All children are provided with planned opportunities to develop and enhance social and emotional skills.
- Adults are provided with opportunities to enhance their own social and emotional skills.
- Staff recognise the significance of social and emotional skills to effective learning and to the well-being of pupils.
- Pupils who would benefit from additional support have access to small group work.
- There is a strong commitment to involving pupils in all aspects of school life.
- There is a strong commitment to working positively with parents and carers.
- The school engages well with other schools, the local community, wider services and local agencies

(Objectives provided through personal communications with National Strategies who monitor SEAL on behalf of the DfES (Addison, 2010)).

SEAL is designed to integrate and develop existing practices that create a whole-school ethos and climate within which social and emotional skills can be most effectively promoted (Department for Education and Skills, 2007a). A range of existing initiatives in which SEAL is design to support or enhance is shown in Figure 1.3. The guidance issued to schools adopting the SEAL programme suggests that this can be accomplished principally through the appointment of a SEAL Lead, and member of staff whose role is to “*secure the vision*” (Department for Education and Skills, 2007a, p26) of SEAL by auditing existing practise, developing ways in which social and emotional competencies may be enhanced and taking action to embed the planned changes.

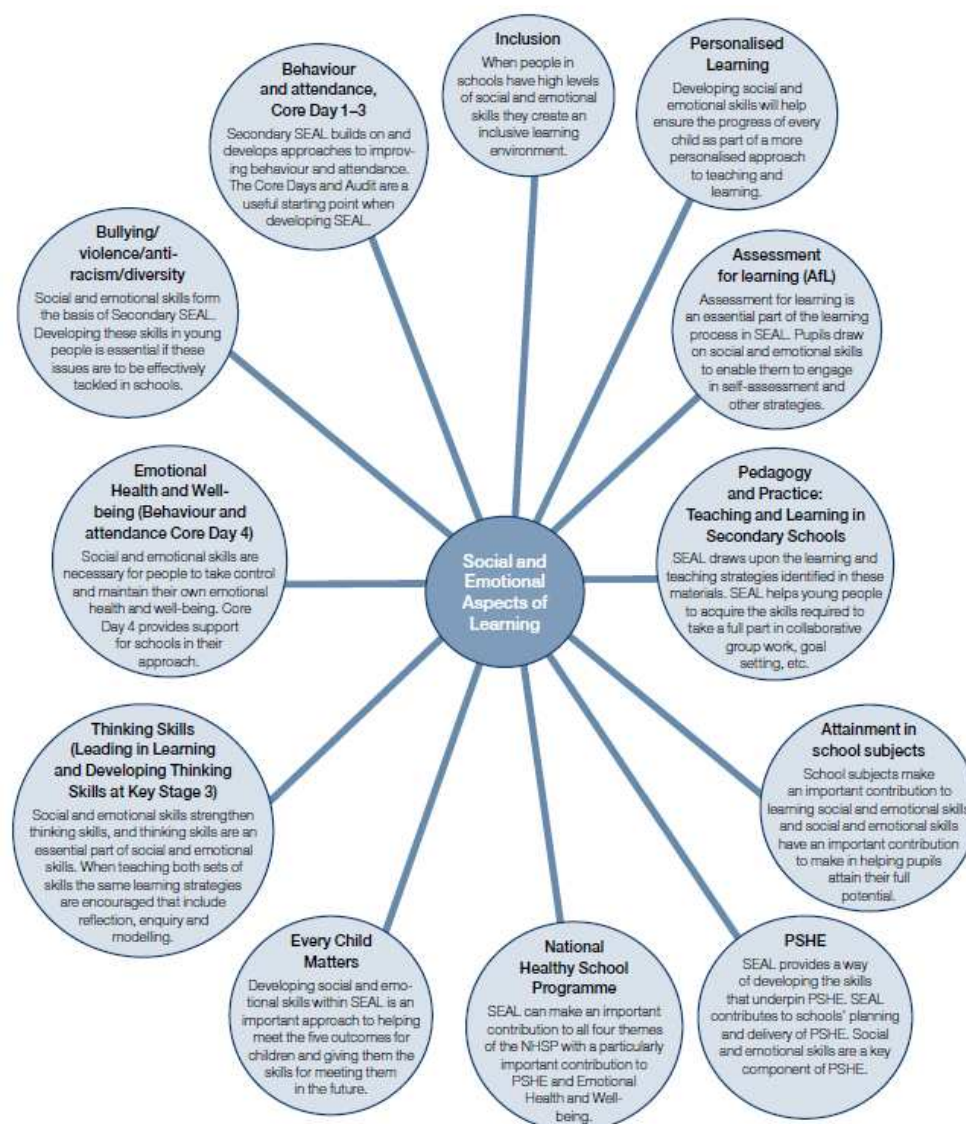


Figure 1.3 SEAL links with existing school initiatives (Department for Education and Skills, 2007a p.17)

The approaches described in the SEAL guidance are arguably unique in relation to previous approaches to social and emotional learning. The previously cited examples of how the SEAL programme operates demonstrate a loosely guided framework (Weare, 2010a), which offers a high degree of adaptation for individual schools. The SEAL guidance actively encourages schools to explore alternative approaches to implementation, rather than follow a single prescribed model, meaning that aspects of the guidance can be selected to suit a school's individual needs or circumstances. This approach is contrary to the majority of existing approaches, which tend to favour a more 'top-down' approach. There are two major implications to this form of design.

First, there is a complication in providing an appropriate assessment for a programme which allows a high degree of variability between schools. This is because such variation does not easily allow for the traditional forms of assessment, typically group comparisons, as it is inaccurate to label all schools as 'SEAL schools' given the potentially high degree of variation. The adoption of multi-level modelling (MLM) as an approach to analysing the data is a method that allows such variation to be accounted for and examined. The second issue is created when comparing SEAL to the majority of published research, as gains in emotional literacy on the basis of a single model, with high fidelity, may not be applicable to this more variable form of implementation. In order to combat this ambiguity, previous evaluations of SEL programmes will be examined in relation to the various methods of delivery (e.g. whole school approach, universal vs. targeted, promotion vs. prevention, etc.). For further details see chapter 3. Although there is evidence that such a flexible approach produces the impression of favourable outcomes, as the results of a previous pilot study of Secondary SEAL testify (Ofsted, 2007; Smith et al., 2007) (see section 3.5), there are a number of difficulties that make the implementation of SEAL (and other SEL programmes) controversial.

First, as previously mentioned, there is a major difficulty in establishing a conceptual definition of EI. Without a clearly defined representation of what skills or competencies might comprise a typical model of EI, it is extremely difficult to associate any beneficial outcome of SEL teaching to unique constructs within the model, rather than any other unmeasured factor such as personality or general ability (Davies, Stankov, & Roberts, 1998). Therefore there is some concern that such a rapid acceptance of concepts yet to be validated has led to hastily formed assumptions that are yet to appear in peer reviewed journals or are constructed on

an insufficient research base (Cherniss, Extein, Goleman, & Weissberg, 2006). Common assumptions include the following:

- Emotional intelligence is required to learn and behave well
- Emotional intelligence is a strong predictor of success
- EI can be taught and therefore can be integrated into the current educational system. (Elias et al., 1997)

Second, despite claims that SEL programmes are responsible for a range of beneficial outcomes in schools, including increased attendance, better behaviour, greater learning and social cohesion (Cohen, 1999; Elias et al., 1997; Park, 1999; Weare & Gray, 2003), the empirical evidence for such claims is largely unsubstantiated (Humphrey et al., 2007; Matthews et al., 2004a; Qualter et al., 2007; Zeidner et al., 2002) and can be criticised on a number of grounds:

- Lack of published research (Durlak, Weissberg, Dymicki, Taylor, & Schellinger, in press)
- Assessment of targeted interventions are used to make claims for whole school results (Durlak & Weissberg, 2007)
- Limitations in methodological design, including
 - o Lack of control groups (Clabby & Elias, 1999)
 - o Lack of longitudinal assessment (Aber, Jones, Brown, Chaudry, & Samples, 1998)
 - o Success criteria based on teacher satisfaction (Shriver, Schwab-Stone, & Defalco, 1999).
 - o Use of unreliable or non-valid outcome measures (Durlak et al., in press)

Third, an additional methodological difficulty has been the frequent use of 'black box' evaluations (Harachi, Abbott, Catalano, Haggerty, & Fleming, 1999) which assesses programmes on an input / output basis. Black box assessments are so called as there is no attempt to study the processes or context of the school in which the programme is placed. This limits the transferability of claims made for the success of EI programmes as process has been cited as a key determinant for successful programme implementation and subsequent results (Durlak & Wells, 1997;

Greenberg, Weissberg, O'Brien et al., 2003; Greenberg, Domitrovich, Graczyk, & Zins, 2005).

Fourthly, although the evidence base in the UK has been increasing (Humphrey, Kalambouka, Bolton et al., 2008; Smith et al., 2007) its contribution compared to US studies is extremely limited. This is particularly problematic due to the cultural differences between countries which affects the design and intention of a SEL programme. For instance, many US programmes are designed to reduce school violence (see Powell (1995) for a review) an issue not reflected to the same extent in the UK. As very few studies have assessed US intervention programmes in a UK context (although a notable exception includes Curtis and Norgate (2007), the extent to which claims for their success within the English education system is unknown.

1.6 Statement of the problem

There are two major difficulties when attempting to assess or evaluate the impact of social and emotional learning programmes employed in schools. First, the distance between academic and popular literature with regards to establishing a solid theoretical framework suggests that although social and emotional learning is currently enjoying significant attention, it is predominately serving to promote the desire for social and emotional development, rather than establishing which of the number of factors (of which popular models of EI are constructed) are attributable to the reported successes.

Second, given the proliferation, inconsistent assessment, and diverse intended outcomes of SEL programmes, it is extremely difficult to establish a link between the theoretical literature and the reported successes in a real-world setting in regards to a wide array of SEL programmes in operation. This is especially true given the wide range of outcome variables attributed to a single psychological construct.

Despite popular support for the teaching and learning of social and emotional skills, there is clearly enough uncertainty in the evidence base to warrant critical examination of proposed SEL programmes, especially when the SEL programme in question (Secondary SEAL) contains a variety of untested components (e.g. revised syllabus guidance materials) as a result of its recent launch as a full scale programme.

Therefore to summarise:

- There is insufficient evidence supporting EI as a construct for favourable pupil outcomes
- The diverse range of SEL programmes makes it difficult to attribute success to any particular factor
- Inconsistent evaluation and methodological limitations limits the interpretation of SEL programme results
- There are sparse examples in UK context where objective measures of impact are used

This thesis reports on an assessment of the impact of Secondary SEAL over a three year period in order to identify how successful the programme is in raising the social and emotional skills of pupils as well as improving behaviour and mental health. In order to make the most authoritative assessment of the SEAL programme and to make statements in regards to future direction for research and policy, it is important to accurately identify not only whether SEAL has an ultimately successful outcome, but also provide some indication as to the reasons behind any conclusions formed as a result of the study. Table 1.3 is an adaption of previous work by Weissberg et al (1997) who identifies three domains in which success is mandatory for a programme to show an impact - specifically concept, design and implementation. Rigour of evaluation has been added as an additional prerequisite, as any impact must obviously be evidenced, and is particularly relevant given the quality of a variety of evaluation studies (see 3.4.4 Rigour of evaluation). This categorisation is important as differences in the area of difficulty dictate the appropriate response. For instance, theoretical weaknesses in the underlying concepts of EI suggest further research is required in establishing coherent domains and incremental or discriminative validity. Conversely, difficulties with measurement suggest the focus of future research should be on the assessment rather than development of SEL programmes, or that difficulties in process suggest resources be devoted to training or producing additional materials. The proceeding literature review deals with each area of difficulty in order.

Area of difficulty	Difficulty	Section of Thesis
Theoretical/ conceptual	There is some difficulty in the underlying psychological or theoretical framework of a programme that suggests skills are not teachable or cannot be learnt	2 The origins of SEL: models of emotional intelligence
Design Process &	Although the underlying framework suggests skills are teachable or can be learnt, the design of the programme does not correctly identify the best way to do this, impairing its ability to actively change such skills	3 Applying EI: Design, process & assessment of SEL programmes
Implementation	Although the programme design is appropriate for the delivery of skills, individual adaptations or a lack of understanding by individual schools means the design of the programme is not implemented faithfully, and impairs the impact of the programme	3.5 Concept, design and implementation of SEL programmes in the UK
Rigour Evaluation of	A programme must be evaluated with sufficient rigour that results either supporting or refuting the effectiveness of the programme can be accepted with confidence	3.4.4 Rigour of evaluation (prior studies) 4 Methodology (current study)

Table 1.3 Pre-requisites for successful impact - Adapted from (Weissberg, Caplan, & Sivo, 1989)

1.7 Research questions

1. What is the impact of the secondary SEAL programme on pupils' *emotional literacy*?
 - a. Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

2. What is the impact of the secondary SEAL programme on pupils' *mental health difficulties*?
 - a. Are there any identifiable socio-demographic factors at school or pupil level associated with these difficulties?

3. What is the impact of the secondary SEAL programme on pupil's *pro social behaviours*?
 - a. Are there any identifiable socio-demographic factors at school or pupil level associated with these behaviours?

4. What is the evidence for an underlying relationship between;
 - a. Emotional literacy and mental health difficulties?
 - b. Emotional literacy and pro social behaviour?

5. What are the qualitative indicators of impact?
 - a. Do these indicators support or contrast the quantitative findings?

2

2 The origins of SEL: models of emotional intelligence

2.1 Introduction to chapter

The aim of this chapter is to provide an overview of the psychological literature describing the theoretical framework of SEL programmes, specifically the development and application of emotional intelligence.

How EI is defined and the extent to which it is a valid framework for influencing pupil skills is of direct importance to how well the SEAL programme is expected to succeed, as it is the framework on which SEAL is based. This is especially true as current literature discussing EI is characterised by a great deal of debate and disagreement in relation to the extent to which EI is able to influence favourable pupil outcomes.

The chapter is divided by an examination of two of the major, competing models of emotional intelligence, the ability model, proposed by Salovey and Mayer (1990) and the subsequent development of the mixed model, attributed to Goleman (1996).

The first section explores various aspects of the 'original' conceptualisation of emotional intelligence, the ability model. The section expands on what is meant by an ability model and discusses its position as an aspect of intelligence, as well as the limitations of this position. The section concludes by assessing the possible contribution such a model could make to teaching and learning, by assessing its value as a framework for delivering favourable pupil outcomes. This is done by assessing its possible impact on 'real life' skills, evaluating its relationships with other constructs, and by discussing how amendable the construct is to direct teaching.

The second section introduces the mixed model of EI and examines the similarities and differences with the ability model. The importance of the mixed model being developed on the basis of the prior work of Salovey and Mayer is discussed. Various criticisms are presented in relation to the evidence supporting some of the claims made of the mixed model, including difficulties with definition and incremental validity, assumption that EI is universally positive, and a lack of supporting research.

The chapter concludes with an assessment of the potential implications for either construct to act as a framework for delivering favourable pupil outcomes.

2.2 Introducing emotional intelligence

The jury is still out as to whether or not there is a scientifically meaningful concept of Emotional Intelligence.” (Epstein, 1998 pp. 22)

Despite sporadic and incidental use of the term ‘emotional intelligence’ prior to the 1990’s (Payne, 1985), Salovey and Mayer (1990) are generally acknowledged to have produced the first formal construct of EI. However, the introduction and rapid interest of the field to a mainstream audience is attributed to Daniel Goleman’s best-selling book “*Emotional Intelligence*” (Goleman, 1996) which influenced the subsequent application of EI in an education setting (see section 2.4).

As discussed later, the models of EI produced by the respective authors are conceptually dissimilar, but still operate under the same term. In this way, EI has never been defined or described in a definitive or accepted manner (Ciarrochi, Forgas, & Mayer, 2001b). By the time the foundation of the concept was sufficiently unambiguous to present a clear definition, the development of competing models has meant that no singular accepted definition has ever been fully accepted. Therefore, when someone refers to ‘emotional intelligence’ this term could apply to any one of several diverse models, each with its own definition, evidence base, and implications for the extent to which it is learnable, teachable and predictive of ‘life successes’. In an effort to provide some clarification to a confusing field, there are two main approaches for classifying models of EI:

Ability model – Attributed to the works of Salovey and Mayer (1990) the ability model refers to the classification of EI as a cognitive ability, similar to other emergent

multiple intelligences such as social intelligence (Cantor & Kihlstrom, 1987) and personal intelligence (Gardner, 1983) (which also involves an interaction between emotion and cognition). It is defined as:

“Recognition, use, understanding and management of one’s own and others’ emotional states to solve emotion-laden problems and to regulate behaviour” (Salovey & Mayer, 1990 p. 189).

The ability model of EI is discussed further in section 2.3.

Mixed Models – Mixed models of EI are substantially different from the aforementioned ability model. Whereas the ability model of EI attempts to confine its definitions to cognitive abilities, mixed models attempt to expand the definition by including non-cognitive factors such as personal independence, self-regard and mood (Bar-On, 1997). It is inclusion of these non-cognitive aspects that defines a model as ‘mixed’. The two main contributors to producing mixed models of EI are Goleman (1996) and Bar-On (1997); it is Goleman’s classification that is normally applied to SEL programmes (see section 2.4).

Trait / Ability classification - An alternative classification is proposed by Petrides and Furnham (2001) who categorize models of EI according to the measures used to assess them (typically divided between self-report and performance based measures) rather than on a theoretical basis. Although this highlights the tendency for EI measures to correlate based on measurement type more so than their underlying theory (e.g. Bastian, Burns and Nettelbeck, 2005), this is a potentially confusing classification for precisely the same reason, as self-report measures have been used to generate data for both ability and mixed models of EI (Bar-On, 1997; Brackett & Salovey, 2006). For the purposes of this thesis, the Mayer et al (2000) classification structure (namely the identification of two opposing models of EI, ability and mixed) will be used as the psychological basis for the proposed model is more relevant than the actual tools used.

2.3 The ability model of emotional intelligence

The formation of EI as a singular construct worthy of study is originally attributed to the work of Salovey and Mayer who first developed a theory of EI based on previous studies into multiple intelligences (Gardner, 1983).

Theories of multiple intelligences and EI resulted from the fusion of two areas of psychological research that emerged in the 1980's. Several conceptual articles appeared during this time, suggesting an interaction between emotions and thought processes (Bower, 1981; Zajonc, 1980) which began to yield experimental results (Mayer & Bremner, 1985; Palfai & Salovey, 1994). At the same time researchers were also proposing a splintering of the omnipresent 'g' of intelligence (Spearman, 1904) into an array of interrelated abilities.

As a result of this research interest, several 'non-academic' (Sternberg, 1997) or 'non-cognitive' (Bar-On, 1997) theories of intelligence emerged that attempted to discriminate capabilities in certain areas from the traditional view of a 'general ability' or 'intellectual' and academic intelligence. The most well-known works of this movement include Gardner's theory of multiple intelligences, which suggests a range of separate intelligence including linguistic, bodily-kinaesthetic and social intelligence (Gardner, 1983). Consequently, EI was a product of this line of reasoning as Salovey and Mayer (1990) suggested the existence of a set of cognitive abilities responsible for synthesising and processing cognitive and emotional information, defined as:

"The ability to monitor one's own and others feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 189)

EI differs from social intelligence by virtue of the inclusion of cognitive processing of personal, *affective* information, as this excludes the appraisal of a more general sense of self and others which are included in models of social intelligence. Instead, EI focuses specifically on recognising and utilising emotional states (both one's own and others), in an effort to solve problems and regulate behaviour. Salovey and Mayer's work has subsequently been updated into a four branch hierarchal model (Mayer & Salovey, 1997) and is displayed in Table 2.1.

Increasing Complexity	Reflective Regulation of Emotions to Promote Emotional and Intellectual Growth			
	Ability to stay open to feelings, both those that are pleasant and unpleasant	Ability to reflectively engage or detach from an emotion depending upon its judged in formativeness or utility	Ability to reflectively monitor emotions in relation to oneself and others, such as how clear, typical, influential or reasonable they are	Ability to manage emotion in oneself and others by moderating negative emotions and enhancing pleasant ones without repressing or exaggerating information they may convey
	Understanding and Analysing Emotions; Employing Emotional Knowledge			
	Ability to label emotions and recognise relations among the words and emotions themselves such as the relation between liking and loving	Ability to interpret the meanings that emotions convey regarding relationships such as that sadness often accompanies a loss	Ability to understand complex feelings: Simultaneous feelings of love and hate or blends such as awe as a combination of fear and surprise	Ability to recognise likely transitions among emotions such as the transition from anger to satisfaction or from anger to shame
	Emotional Facilitation of Thinking			
	Emotions prioritise thinking by directing attention to important information	Emotions are sufficiently vivid and available that they can be generated as aids to judgement and memory concerning feelings	Emotional mood swings change the individuals perspective from optimistic to pessimistic encouraging consideration of multiple points of view	Emotional states differentially encourage specific problem approaches such as when happiness facilitates inductive reasoning and creativity
	Perception, Appraisal and Expression of Emotion			
	Ability to identify emotion in one's physical states feelings and thoughts	Ability to identify emotions in other people, designs, artwork etc..., through language, sound, appearance and behaviour	Ability to express emotions accurately and to express needs related to those feelings	Ability to discriminate between accurate and inaccurate or honest versus dishonest expressions of feeling
	Increasing complexity			

Table 2.1 Hierarchical model of Salovey and Mayers ability model of emotional intelligence (Mayer, 1999)

Each branch of the model represents an increasingly complex series of cognitive-emotional abilities (the ability to cognitively assess affective information) which are progressively more integrated within individual's major psychological subsystems (Mayer, 1998);

Perception, appraisal and expression of emotion - Described as the most basic and molecular ability of EI, (Mayer, 1999), individuals utilising this level of EI would be expected to recognise and describe emotions displayed in facial expressions or artwork.

Emotional Facilitation of Thinking – The second branch of the ability model of EI includes an increasing sophisticated application of EI such as the assimilation of basic emotions into conscious thought, such as appraising an emotional state in relation to sound, colour or taste.

Understanding and Analysing Emotions - For an individual to be considered to be displaying abilities from the third branch of emotional intelligence, a reasoning of one's self or others emotional state is required. Examples include recognition that anger may arise as a result of injustice, or that sadness can create a sense of loneliness.

Reflective Regulation of Emotions to Promote Emotional and Intellectual Growth - The highest level of EI is demonstrated through the active regulation of one's own or others emotion. This may manifest through an ability to calm down after feeling angry in an effective manner, or an ability to empathise and sooth the anxieties of another person.

As the model is hierarchical, it is proposed that an individual who displays low EI would be unable to access the more complex branches of the model. Conversely, a person with high EI would be able to utilise all of Salovey and Mayer's branches. This is similar to the idea that anyone who displays difficulty in performing addition or subtraction would be unable to practise more complex mathematics such as long division, or for instance, a basic level of reading would need to be accomplished to order to access more complex texts.

Despite the promisingly logical layout of this model, there are several conceptual difficulties which limit its potential position as an established form of intelligence.

With such a range of ability within one model, it is likely that the cognitive architecture involved in assessing cognitive and affective information is a result of several different psychological systems. For instance, automatic and low level psychological processes are commonly involved in the recognition of facial expressions (perception, appraisal and expression of emotion) (Rinn, 1984), whereas higher order manual cognitive processing is required to evaluate how typical a displayed emotion is (reflective regulation of emotions), as this would require a conscious retrieval of a memory of previous events. Therefore, this model is highly suggestive of both explicit and implicit processes, but the relative degrees of importance to EI are not differentiated. It may also be presumptuous to assume that differing psychological subsystems are hierarchical, especially if they are separate (Matthews et al., 2004b).

Another issue with (although not confined to, see section 2.4) the ability model is the assumption that the higher levels of EI can be expressed consciously and explicitly. For instance, an individual would be able to verbally express their emotional evaluations of stimuli or knowledge and describe what their actions may be in response in these situations. This assumption is contradictory to previous research as it has been suggested that much of expertise is procedural in nature (Anderson, 1996). Therefore, the individual has little conscious awareness of the processes that support their competency of emotional awareness or regulation and would be unable to verbalise any active process in regulating or assessing emotional stimuli. This has significant implications in validating such a model as individuals will not be able to willingly provide an indication of their level of EI and instead a form of behavioural assessment (such as response times in processing emotionally laden information) would be required. Such measures would also need to differentiate between the different levels of EI, as discussed previously, there is likely to be varying processing times between emotionally laden information depending on what psychological process is involved. Although measures capable of this do exist, they are not widely used in EI research (e.g. the emotional Stroop task (Williams, Mathews, & Macleod, 1996). Therefore existing measures that include the testing of explicit emotional knowledge may not be accurate predictors of levels of EI, especially those available for use in a school environment (Wigelsworth, Humphrey, Lendrum, & Kalambouka, 2010).

The model also assumes that an individual's ability in cognitively assessing affective knowledge is generalisable across different scenarios and settings. For instance, according to Salovey and Mayer's model, an individual is expected to recognise,

analyse and control feelings of fear or anger to the same extent as feelings of happiness or joy. This is contradictory to basic emotions theory which suggests each emotion is supported by its own distinct neuropsychological system (Panksepp, 1998). In order to integrate with existing theories on emotions, EI must act as overall umbrella (either as a controller or mediator) of several distinct subsystems. Although this is arguably a crucial point for the acceptance of a theoretical framework of EI, the generality of EI across emotions is yet to be empirically tested (Matthews et al., 2004a). This reflects an overall lack of empirical research in establishing the conceptual coherence of models of EI (Cherniss et al., 2006).

Perhaps the biggest difficulty in accepting the conceptual coherence of the ability model of EI is the difficulty in discriminating the concept from other existing constructs. For instance, it has already been mentioned that explicit memory of prior events is required to reflect on others emotional displays and to affectively regulate one's own emotions. Should an individual display difficulty in this area; is it a result of poor EI or poor explicit memory recall? Equally, the role of temperament, (influenced by underlying genetics) has been seen to alter relations and emotional interactions between child and caregiver. For instance, distress prone children can illicit poorer parenting quality (Kochanska & Coy, 2002) which will in turn shape acquisition of emotional and social skills, as well as self-awareness (Zeidner, Matthews, Roberts, & Maccann, 2003). The role of the environment is also an important mediating factor (e.g. is it easier to understand emotional knowledge in a highly emotional situation such as a funeral compared to a more banal example where the source of emotion is less obvious, such as frustration in queuing at the supermarket?).

The extent to which EI can be seen as independent from pre-existing factors (both interpersonal and intrapersonal) is highly questionable and is made more-so by its labelling as an intelligence, which suggests EI should exist as a construct distinct from the aforementioned factors.

2.3.1 Is emotional intelligence an intelligence?

By making explicit the role of cognition and by labelling their construct 'Emotional Intelligence' (rather than 'competence' or 'skill') Salovey and Mayer make clear their intention for their model to take the position of as a one of a range of multiple intelligences. There are two important implications of this assertion. Firstly, as an intelligence, EI is expected to conform to a number of stringent criteria in order to be

categorised as a 'true' or 'traditional' intelligence (Mayer, Caruso, & Salovey, 2000a) in line with previously established taxonomies (Carroll, 1993). However, as will be discussed, whether the accuracy or validity of an EI construct is bolstered by meeting these criteria is debatable. The second important implication is by classifying EI as an intelligence, there is a corresponding assumption that EI will have the same implications for teaching, learning and developing as traditional forms of intelligence (Matthews, Zeidner, & Roberts, 2007). For instance, there is a strong relationship between academic intelligence and achievement (Sternberg, 2000). This raises the question as to whether there is relationship between 'emotional intelligence' and 'emotional achievement' in the same way. In this regard, it is critical to the implications of teaching and learning EI based principles to establish whether EI can successfully meet the conceptual criteria for being considered an intelligence.

In relation to the first point, intelligence is defined as a capacity to carry out valid, abstract reasoning within a domain of information (Sternberg, 2000). For instance, displaying reasoning in how objects fit together would be utilising spatial intelligence, composing scores and forming patterns of notes would be musical intelligence and the reasoning of emotions and their implications in relationships would be considered emotional intelligence.

However, as previous mentioned, a criticism of the ability model is that its definition includes reference to psychological subsystems (such as the experience and recognition of emotion and the recall of past emotional states). As such, the model is currently contradictory to Sternberg's definition which excludes contextual information in favour of a more abstract form of processing. Therefore EI does not meet the criteria for a traditional form of intelligence. The incompatibility of including non-cognitive aspects is not unique to EI (for instance processing previous social encounters in social intelligence) and, considering the continuing controversy in this area of research (Sternberg, 2000), this could be considered a difficulty with defining intelligence rather than with the conceptualisation of EI. An alternative view on the nature of intelligence, based on works by Cattell (1943), provides some leeway in accepting EI as an intelligence. Cattell proposed two components to structuring an intelligence – crystallised and fluid aspects. Fluid aspects of intelligence refer to the abstract capacity for 'pure' processing, independent of context whereas the crystallised aspect provides the background or context of relevant memories (such as prior knowledge of a person or situation, experience, or social rules, all of which blend together (Nigro & Neisser, 1983)). The theory of fluid and crystal forms of intelligence would allow for the inclusion of non-cognitive aspects into a model of EI,

as competence in accessing emotionally laden information (such a past events) would be considered a component of crystallised EI. However, the nature of the relationship between EI and Cattell's concepts, or in fact, any form of unifying structure lacks empirical research. The authors of the ability model acknowledge this limitation and offer the following rebuttal:

“Simply because emotion and intelligence are active throughout most of one’s mental processes...EI is distinct from other mental processes in involving a primary focus on a specific area of problem solving” (Mayer, Roberts, & Barsade, 2008, p.511)

Although Salovey and Mayer acknowledge that EI should exist as distinct mental ability, there is little theoretical consensus as to where or how it fits into existing taxonomies (Davies et al., 1998; Matthews et al., 2004b). As a consequence, much of the focus of EI research has been the development of empirical measures in order to compare with existing constructs. This direction in the field of EI research has several implications. On one hand, even with a successful theoretical model, the practical application of EI would be extremely restricted without some form of measureable criteria, especially if the intention is to actively improve an individual’s EI performance; therefore effort in developing objectives measures is warranted. However, in comparison to the long standing arguments in intelligence research, measurement of constructs is exceedingly complex and controversial area and there is a large amount of cynicism in the ability of psychometric testing to adequately represent underlying mental abilities, as described by Boring: *“Intelligence is what intelligence tests measure”* (Boring, 1923, p. 35). The artificiality of a construct, as suggested by Boring’s quote is particularly true when there is a disagreement about the underlying psychological model, as it is only when there is consensus between theory and measurement and both are coherent that any measure may be considered satisfactory (Geher, 2004). Therefore, although further work in the establishing and measuring the concept of EI is clearly warranted, further work in its practical application in a real world setting may provide more useful insight. This leads to the second point in classifying EI as an intelligence; the implications of a how such a model fits into current understanding of teaching and learning.

2.3.2 Implications for teaching and learning

So far, the research presented has been focused on establishing a conceptual framework. Although it is clear that there are major difficulties in this regard; even the most theoretically established model would be severely limited if there was no apparent application in a real world setting. To this end, evidence of EI being applied in a practical setting is vital in establishing a basic conceptual validity for any SEL programme, including SEAL. In relation to this requirement, there is a growing body of literature reporting links between many of the factors associated with EI (as classified by the ability model), both as a facilitator to positive outcomes (e.g. success at school (Brackett & Mayer, 2003; Feshbach & Feshbach, 1987; O'connor & Little, 2003)) and as a mediator to negative outcomes such as disruptive behaviour (Poulou, 2005), difficulty with peer relations (O'neil, Welsh, Parke, Wang, & Strand, 1997) and higher chance of engaging in risk taking behaviours (Trinidad & Johnson, 2002). Many of these findings are presented as definitive proof for the relationship between EI and school success (Cohen, 1999; Elias et al., 1997; Zins, Weissberg, Wang, & Walberg, 2004); however such claims are arguably largely unwarranted. This is because under closer inspection, the literature suffers from several key flaws which significantly limit their application in a real world setting. Examples of such flaws include very low correlations reported as significantly meaningful, assumed causality in correlation studies, lack of clear definitions of what is meant by school success and incorrectly attributing social skills to elements of EI. The literature linking EI (as defined by the ability model) to various factors of school success will be reviewed in an attempt to more accurately assess its application to teaching and learning, and subsequently its appropriateness as an underlying construct for SEL programmes, including SEAL.

Low correlations

Several studies present a link between various aspects of EI (such as recognising emotions in others, self-regulation and emotional knowledge) and success in school (e.g. improvements in reading, maths or standardised scoring); however the findings are too low to being practically meaningful (even if they are statistically significant) or are not suggestive of a beneficial relationship (e.g. the relationship is negative). For instance, Feschbach & Feschbach (1987) cite a link between affective processes and academic achievement, however the results of the study are extremely marginal

(there is a negative relationship between empathy and reading ability, $r = .20$) and the direction of the relationship does not indicate that teaching or learning empathy or reading would be beneficial for pupils EI. Although more substantial results are found in similar areas in the study, (e.g. a more significant relationship between depression and performance in maths, spelling and reading), this analysis should be treated separately when commenting on the construct of EI. This is because although there is a suggestion that EI acts as a mediator between stress and depression (Ciarrochi, Deane, & Anderson, 2002) as it is not directly related to any conceptual model of EI it should not be used as evidence of such. Additionally, the author reports significance at the 90% confidence interval for similar results, which suggests a lack of noteworthy findings. Despite this research indicating such marginal impact, it is reported as support for the EI construct contributing to academic success (Zins et al., 2004). Such a claim is at best inaccurate, and at worst misleading.

More recent studies also follow this trend as Brackett and Mayer (2003) report a significant relationship between levels of EI performance (as measured by the MSCEIT (a performance measure based on the ability model) (Mayer, Salovey, & Caruso, 2002), and deviant behaviour at high school. However the strength of the correlations is low, ranging between 0.16 – 0.27. Similar results were found by O'Connor and Little (2003) and also Trinidad and Johnson's (2002) study found low correlations between EI and tobacco and alcohol use (0.1- 0.3) in a sample of 232 adolescents. Although it is true to say that a relationship between EI and school success as a result of these studies, considering the strength of the reported findings, a warning as to the practical value (e.g. the extent to which school behaviours actually change) is required when reporting them, a warning is not present in the aforementioned literature.

For the studies that do display a more robust relationship between social and emotional skills and academic achievement (Izard, Fine, Schultz et al., 2001; O'Connor & Little, 2003), the predictive validity of such findings can be reduced to a level of non-significance when controlling for factors such as cognitive intelligence and other personality measures (Amelang & Steinmayr, 2006; Barchard, 2003; Bastian, Burns, & Nettelbeck, 2005; Mestre, Guil, Lopes, Salovey, & Gil-Olarte, 2006). Whereas there is increasing evidence to suggest that certain models of EI are capable of producing incremental validity beyond other established personality factors (Gardner & Qualter, 2010), there still remains a need to link conceptually distinct models to successful outcomes. Whereas there is some evidence of this occurring (e.g. Schutte, 2007, Qualter, et al, 2007) much more work is required in the

area to provide evidence as to EI's potential as a driver of successful outcomes. An additional difficulty is that whereas the cited evidence may indicate a valid EI construct, and recent evidence may suggest its potential in mediating or driving key outcomes, such models are not typically utilised in the design of school programmes (see chapter 3).

Lack of causality

Another limitation in several of the articles used to support the teaching and learning potential of the EI construct (including the research cited in the previous paragraph) is the assumed causality of the relationships presented, namely, that social and emotional skills cause academic competence. Various authors support a model of academic competence that includes social emotional competence as a predictor, similar to the model displayed in Figure 2.1. Several researchers have reported a link between positive social-emotional competence and range of positive outcomes including successful adjustment to school and improved grades and achievement. For instance, in validating a measure of academic competence, DiPerna and Elliott (1999) provide evidence that social and emotional skills are an integral component of academic competence (See Figure 2.1). Although this study is cited as evidence of EI's contribution to school outcomes, presenting a unidirectional relationship given the results of the above research is both presumptive and over-simplistic. It is a major (although worryingly common) error to assign causality on the basis of correlational evidence.

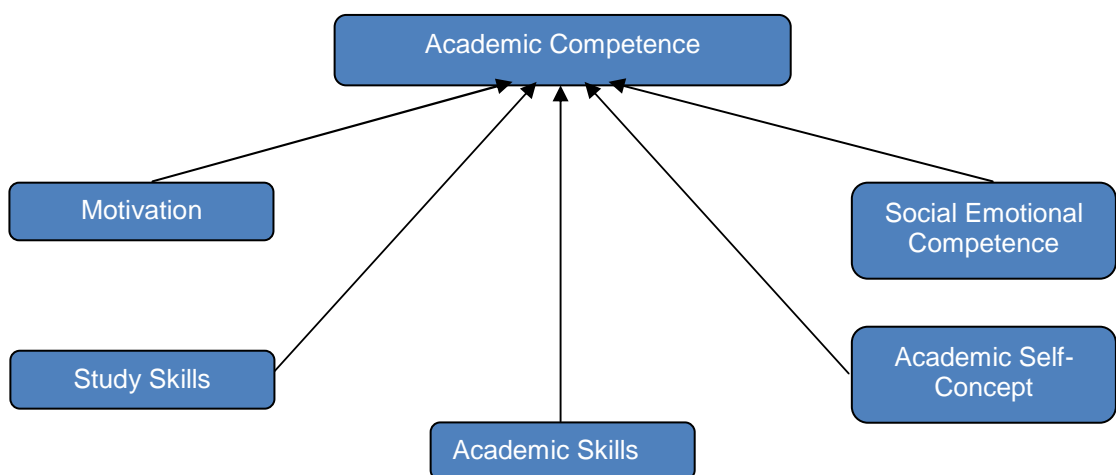


Figure 2.1 – Proposed model of how social and emotional competence contributes to academic competence (adapted from Di Perna and Elliott, 1999)

It is equally possible that several alternative scenarios are responsible for such findings. To clarify this point, consider the following examples;

A child who has difficulty in monitoring or evaluating their own or others feelings may become distracted and have difficulty operating in the learning environment as a result of these difficulties, by being unable to deal effectively with social situations between pupils and teachers, thus causing a subsequent decline in their academic performance. In this way, social emotional competence influences later academic competence.

However, a second example highlights a converse, and equally possible scenario;

A child with deficit academic skills may cause frustration and disruption which in turn leads to rejection by peers and stigma associated with academic failure, leading to a subsequent decline in social and emotional competence (Welsh, Parke, Widaman, & O'neil, 2001). In this example, academic competence influences later social emotional competence.

Given the theoretical framework of EI, namely its expectation to correlate with other forms of intelligence, and the requirement of the input of emotional knowledge and experience to be effective (Mayer et al., 2000a) it is likely the nature of the relationship between EI and academic competence is interactional (Welsh et al., 2001). This suggests that for any programme based on EI as a framework (such as the SEAL programme), the answer may not be as simple as expecting favourable outcomes by increasing EI based skills and behaviours. However, several authors note the need for further study in this area (Humphrey et al., 2007; Qualter et al., 2007) in attempt to establish more clearly the nature and direction of identified relationships and therefore making any definitive claims as to the causality or strength or such relationships may be premature.

Dimensionality

Perhaps the most complex difficulty in validating research linking EI and its favourable outcomes is the use of imprecise terms of non-cognitive factors being associated with the construct that makes it difficult to establish whether it is EI or some other related construct responsible for the reported results.

For instance, in relation to Salovey and Mayer's definition of EI;

“The ability to monitor one’s own and others feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions”. (Salovey & Mayer, 1990, p. 189)

Several papers used as support for EI fall outside of this definition. For instance, Ladd (Birch & Ladd, 1998; Ladd, Birch, & Buhs, 1999; 1996) appear to substitute the phrase ‘*social-emotional competence*’ for ‘*pro-social skills*’, which implies a much stronger inter-personal component than the working definitions of social competence or EI suggest, especially when their definitions included domains such as companionship, validation, aid, self-disclosure, conflict, and exclusivity. It is difficult to see how such factors fit into Salovey and Mayer’s definition.

A more recent example is provided by Malecki and Elliott (2002) who define their area of research as social skills: “*Socially acceptable learned behaviours that enable a person to interact effectively with other and to avoid socially unacceptable responses*”. (p. 6). Such a definition causes two problems. First, by focusing on inter-personal relationships, there is an implicit assumption that EI has to be a multidimensional model (inter-personal and intra-personal), meaning research conducted under the assumption of uni-dimensional model is no longer accurate, as there is no differentiation between the relative contribution of the different domains.

Second, the majority of the definition lies outside existing conceptualisations of EI constructs, suggesting that the majority of any noticeable improvements are as a result of non-cognitive factors which are not directly associated with the current working definition of EI. This presents a dilemma in assessing supporting research that does not adequately define its dimensionality. Either researchers are forced to reject such findings as excessively broad as assessments likely overlap with basic personality traits and yield research findings that are difficult to interpret (Brackett, Mayer, & Warner, 2004; Brackett & Salovey, 2006) or alternative factors are differentiated but labelled as a separate construct (e.g. peer relations, assertiveness or existing personality factors).

Although positive and productive peer relations are a theorised beneficial outcome of high EI, and it is suggested that pro-social competencies mediate the relationship between high EI and peer relations (Petrides, Sangareau, Furnham, & Frederickson, 2006), neither idea is a direct result of teaching and learning EI skills, as defined by the ability model. This is an example of the practical difficulties faced when producing literature without a common working definition of the concepts involved.

The implication of this inconsistent terminology is that evidence is presented as supporting the construct of EI may actually be attributed to non-cognitive factors such as personality or another form of intelligence (Mayer & Cobb, 2000a; Zeidner et al., 2002), therefore limiting the potential for favourable pupil outcomes as a result of an EI based SEL programme.

Extent to which EI is teachable

Although evidence is gradually beginning to emerge supporting a relationship between EI and school success (Mestre et al., 2006; Shields & Cicchetti, 1998), there remains very little comment of the feasibility of being able to explicitly impart or teach such a construct (Zeidner et al., 2002). Such ability is a requirement for successful SEAL impact, as noted in Table 1.3.

Although Mayer (the author of the ability model of EI) argues it does not make sense to consider teaching an intelligence, as intelligence refers to a pre-existing capacity to learn rather than an ability which can be practised (Mayer & Cobb, 2000a), recent arguments suggest intelligence is more flexible than Mayer reports. For instance, other forms of non-cognitive and cognitive intelligences concerning learning and reasoning within a particular domain are enhanced by learning. For example, in the case of verbal-comprehension, exposure to new words and meanings provides an increased knowledge base in which to apply understanding, promoting the intelligence (Sternberg, 2000). Therefore it may be argued that with exposure to emotional situations and an emotional range, an individual may become increasingly better equipped to apply emotional knowledge and reasoning learnt to more complex scenarios therefore raising their EI (Mayer et al., 2008). This is however, an indirect link between emotional knowledge and EI, and combined with the overall disappointing results in a range of published research, it is not surprising that several authors (Mestre et al., 2006; Shields, Dickstein, Seifer et al., 2001) call for research similar to that demonstrated by Izard (2001) in which emotional knowledge as a predictor of both social behaviour and academic competence is assessed. Therefore should a link between EI and school outcomes exist, on the basis of the aforementioned research, it is likely to take a form where EI plays a reciprocal or mediating role (Izard et al., 2001).

In summary, it is clear that the literature used to support claims for SEL to be integrated into school curricula (Zins et al., 2004) suffers for a several serious flaws.

It therefore seems an unqualified leap to accept the design and implementation of full scale programmes (including SEAL) of this basis. The research also suggests that it is not the cognitive factors of the ability model that give rise to the claims of greater school success and for research that is not subject to the above criticism, there is an indication that it may be non-cognitive, related factors such as peer relations and emotional knowledge that influence the beneficial outcomes (Matthews et al., 2007). Many of the SEL programmes use a much wider conceptualisation of EI which contain these non-cognitive factors. Therefore the attention is now turned to range of vastly increased models and their non-cognitive factors are assessed.

2.4 Subsequent development of EI – mixed models

As previously mentioned, the founding of EI as a construct of psychological study is attributed to Salovey and Mayer (1990), however, the introduction of EI to a mainstream audience and its subsequent popularisation is attributed to the works of Daniel Goleman (1996). Released as a self-help book, "*Emotional Intelligence: Why it can matter more than IQ*" presented a model of EI, adapted from Salovey and Mayer's work, defined as a series of learned competencies or non-cognitive abilities:

"Abilities such as being able to motivate oneself and persist in the face of frustrations; to control impulse and delay gratification; to regulate one's moods and keep distress from swamping the ability to think; to empathize and to hope." (Goleman, 1996, p. 34)

There has been difficulty in establishing clear definitions of the various criteria included within Goleman's definition. Statements such as "*Keep distress from swamping ability to think*" or "*to empathise and to hope*", although sounding important, do not actually provide any clear conceptual definition which can be applied. Equally, there is difficulty with the use of word "*frustration*" as there appears little reason why such an emotion might be singled out exclusively rather than stress, anxiety or depression for example, which have been validated as correlated but separate areas of mental health associated with emotional competence (Ciarrochi et al., 2002), other than the term resonates well with an audience. Later editions of Goleman's writings address some of these issues and have produced a less 'scatter-shot' definition:

"The capacity for recognising our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" (Goleman, 2000, p. 317)

Although other mixed models have been generated as a result of this work, the focus of this thesis is on the ability model (as the original conceptualisation of EI and basis for Goleman's work), and Goleman's mixed model as SEAL is designed almost exclusively on Goleman's principles.

Goleman categorises his model in five domains, summarised in Table 2.2.

Inter/ intra personal	Domain	Description (Goleman, 1996, p. 34)
Inter-Personal skills	Self-Awareness	"Knowing one's emotions, recognising a feeling as it happens... ability to monitor feelings from moment to moment"
	Managing Emotions	"Handling feelings. Capacity to sooth oneself, shake off rampant anxiety, gloom or irritability"
	Motivation	"Marshalling emotions in the service of a goal...paying attention...self-motivation...emotional self-control... delaying gratification and stifling impulsiveness"
Intra-Personal Skills	Empathy (Recognising emotions in others)	"The fundamental people skill..."
	Social Skills (Handling relationships)	"Skill in managing emotions in others"

Table 2.2 Goleman's five domain mixed model of EI

Despite a clearer structure, there are still several issues with the vocabulary used in the updated model.

First, there is an issue with terms used in defining EI, specifically with the use of the word '*capacity*'. The use of this term implies a fixed or limited extent to which EI may be fostered, taught or learnt. However, one of the central tenets of Goleman's writing is the malleability of EI and its potential to be developed and improved and it is difficult to reconcile this inconsistency. Second, lack of clear criteria is also present in the definitions of the various domains. This is especially true for the last two of

Goleman's domains, 'social skills' and 'empathy', which deviate from the prior ability model, (this is an important point and is discussed in more detail the following section 2.5). For instance, the phrases "*the fundamental people skill*" and '*to empathise and hope*' are extremely vague as operational definitions. Goleman's classification into five domains, although based on the previous works of Salovey and Mayer (1990), lack of a clear conceptual criteria as to what abilities are included, and what existing framework of human ability or personality they might fit into, is not provided. Clarification of these points are overlooked in Goleman's own text which, in an attempt to provide details as to the various aspects of his model, a series of vignettes or 'moral tales' (both fictional and non-fictional) are used as exemplars. In the case of "*managing emotions*" several cases are provided, including the reporting of a burglary turned murder (p. 13) , the tantrums of a child denied a novelty brand of cereal in the supermarket (p. 61) and an irate taxi driver (p.64). It is Goleman's assertion that such examples typify the object of discussion, namely a unitary ability or skill that impairs the quoted individuals' abilities is the direct cause of their misfortunes. However, in reality the scenarios serve only as well-meaning platitudes of the folly of human nature and as moral tales that readers of the text may aspire to, rather than providing operational, definable, or testable domains.

Inherent in Goleman's mixed model of EI is the assertion that EI is a predictor or driver of success in a number of different areas, above and beyond existing constructs (such as other forms of intelligence). Several editions of the original text are subtitled "*Redefining what it means to be smart*" and an often cited claim of Goleman's is that "[EI is] *as powerful, and at times more powerful, than IQ*" (Goleman, 1996, p. 34). One of the central themes of the text centres on the ability of IQ scores to predict life successes by approximately 20%. Goleman postulates that EI is capable of predicting tasks related to life success above and beyond this 20% figure. Such claims have resonated with mainstream audiences and Goleman's book cites several examples where the model has been applied in practise. The education sector receives particular attention by Goleman as several SEL programmes have been designed to contain aspects of Goleman's mixed model of EI (see Table 3.2) Despite the fantastical claims of the predictive validity of such a model, and the reported successes of operating SEL programmes in schools often cited by Goleman, there are several theoretical ambiguities that question the validity of these claims:

- Previous paragraphs have clearly shown the lack of conceptual coherence in defining an ability model of EI. Given the inclusion of wider criteria in mixed models, how is the EI construct defined or measured?

- Previous studies into constructs of EI are unable to provide evidence of substantial predictive validity (Matthews et al., 2004a); therefore what unique factors have been added to mixed models to justify the rather extraordinary claims made? If a single construct was able to predict success at such levels; it would exceed any finding made in the last 100 years of applied psychology (Mayer et al., 2000b).

- Given the difficulty in confirming a measuring domains of EI in ability models (Geher, 2004), how have the additional factors included in mixed models been validated?

Such ambiguities have obvious implications for the reported success of the model, especially given its application in education. Several authors raise similar concerns (Mayer & Cobb, 2000a), therefore next subsection assesses the validity of Goleman's mixed model of EI in relation to previous literature in an attempt to elucidate these ambiguities.

2.5 Comparing the ability and mixed models of emotional intelligence

Goleman cites the prior work of Salovey and Mayer as the basis for the mixed model, and in comparing the two models (Table 2.3 Comparison of the ability and mixed models of EI) certain similarities are clear. For instance both the mixed and ability model acknowledge that one key component to EI is the ability to monitor and recognise one's own emotions (*self-awareness / perception, appraisal and expression of emotion*), (although the term self-awareness implies a much wider scope to this domain, for instance, the inclusion of bodily perceptions or measure of self-worth, it may be labelled more accurately as '*emotional self-awareness*'). Similarly, both models also acknowledge another key component of EI is "*regulation*" or "*management*" of emotions. A minor variation between the two models occurs at this point as Goleman suggests that managing emotions requires the active ability to change or suppress negative emotion, a factor which is also acknowledged by the ability model, but as a more sophisticated (rather than basic) element. It is

interesting to note that Goleman does not use any positive terminology in his definition of “*managing emotions*”, focusing only on anxiety and depression, even though positive examples are cited in his book (Goleman, 1996). This may be suggestive of Goleman's intention for mixed model of EI applied in a practical setting, and therefore resonates most with individuals seeking self-help books rather than attempting to establish a psychological sound conceptual framework; however there is no evidence to support or refute this speculation. One major departure between the two models is Goleman's inclusion of “*motivation*” as a component of EI. Although this domain shares some similarity with Salovey and Mayer's “*Emotional facilitation of thinking*”, it is the goal orientated approach of the mixed model that sets it apart from the ability model's definition, specifically the phrase “*in service of a goal*”. Such goal orientated behaviour is not compatible with the ability model, and as seen previously, motivation is conceptualised as independent of social and emotional skills (Figure 2.1).

Another major departure from the domain of mental functioning is the inclusion of inter-personal skills, namely “*empathy*” and “*social skills*”. It is difficult to comment upon the similarity of the final two domains given the mixed model's insufficient definition. However, as both models acknowledge an degree of inter-personal relations, given the goal orientated deviations of the mixed model, it is likely that the two domains, “*empathy*” and “*social skills*” share only surface features and that the mixed model implies a much more interactional effect than the ability models definition.

Mixed Model of EI (Goleman, 1996)	Ability Model of EI (Salovey & Mayer, 1990)
<p>Self-Awareness</p> <p>“Knowing one’s emotions, recognising a feeling as it happens... ability to monitor feelings from moment to moment”</p>	<p>Perception, appraisal and expression of emotion</p> <p>Ability to identify emotion in one’s physical states, feelings and thoughts</p>
<p>Managing Emotions</p> <p>Handling feelings. Capacity to sooth oneself, shake off rampant anxiety, gloom or irritability.</p>	<p>Reflective regulation of emotion</p> <p>Ability to reflectively monitor emotions in relation to oneself and others, such as how clear, typical and influential or reasonable they are</p>
<p>Motivation</p> <p>Marshalling emotions in the service of a goal...paying attention...self-motivation...emotional self-control...delaying gratification and stifling impulsiveness</p>	<p>Emotional facilitation of thinking</p> <p>Emotional states differentially encourage specific problem approaches such as when happiness facilitates inductive reasoning and creativity</p>
<p>Recognising emotions in others (Empathy)</p> <p>The fundamental people skill...</p>	<p>Perception appraisal and expression of emotion</p> <p>Ability to identify emotions in other people...through language sound appearance and behaviour</p>
<p>Handling relationships (social skills)</p> <p>Skill in managing emotions in others</p>	<p>Reflective regulation of emotion</p> <p>Ability to manage emotion in oneself and others by moderating negative emotions and enhancing pleasant ones</p>

Table 2.3 Comparison of the ability and mixed models of EI

In comparing the two models, it is clear that there is some level of strategic fit, consistent with Goleman using the ability model as a basis for his work. However, there are some major discrepancies with various to the mixed model that are cause for comment.

One major difficulty is the dubious specificity of the additional domains that make up Goleman’s mixed model of EI. Although the majority of the domains are sourced from the aforementioned ability model, the original domains were indicative of cognitive subsystems. This being the case, it is difficult to see where the domains of “*empathy*”, and “*social skills*” fit. This is because these domains require active inter-personal relations, whereas the ability model indicates a more passive relationship.

This raises the question, if the domains are not a mirror of Mayer and Salovey's original conceptualisation, what underlying structure is responsible for a common framework, i.e. why do these domains belong together if they do not form a unified model? There is no clear answer to this question as it appears the common element is the title "Emotional Intelligence" which is a misnomer given the inclusion of social (rather emotional) skills and its rejection of traditional conceptualisation of intelligence. To clarify, the ability model proposes that EI shares a reciprocal relationship with IQ as one of the requirements of an intelligence is a correlational relationship with other forms of intelligence (Mayer et al., 2004). However, the mixed model proposes a much more dichotomous relationship with IQ, arguing that are separate (although not opposing) constructs. By asserting such a division between EI and IQ, the role of cognition is rejected by the mixed model. The inherent difficulty with such a conceptualisation is that this is also the rejection of the framework in which EI exists. Such a reconceptualisation is supported in the literature as measures based on the mixed model of EI do not correlate with IQ (Brackett & Mayer, 2003).

In an effort to establish a working framework for the mixed model(s) of EI, researchers have proposed that domains such as Goleman's belong not as cognitive subsystems, but as facets of existing personality constructs (Ciarrochi et al., 2001b; Sternberg, 2000). This is because Goleman's model relates to behavioural tendencies and self-perceived abilities which exist within a personality framework. It is worth noting few models of personality correlate with IQ (Ackerman & Heggestad, 1997). For instance, many personality variables are included as favourable outcomes of high EI such as control of impulsiveness, assertiveness and optimism (Goleman, 2000). There are a number of advantages and disadvantages of conceptualising Goleman's model as part of existing personality traits.

By investigating a collection of dispositions and self-perceived abilities rather than a framework of cognitive functioning, many of the difficulties encountered in attempting to validate a model of intelligence (see section 2.3.1) are sidestepped. For instance, the construction of accurate and valid tools to measure cognitive abilities is a far more difficult task compared to the self-report measure examining self-perceived abilities (Petrides & Furnham, 2001; Roberts, Zeidner, & Matthews, 2001). This allows a far greater degree of flexibility in examining such a construct as, being unhampered by methodological difficulties inherent in intelligence research means the potential for a more productive research base, and recent publications reflect the

change in focus from establishing a conceptual framework to the validation of the construct in applied settings (Petrides & Furnham, 2001). Flexibility in research is also supported by no longer needing to meet pre-existing criteria for intelligences such as an ability to correlate with other forms of intelligence or to show a developmental increase in ability (Mayer et al., 2000a). However, despite the comparative ease in developing self-report measures rather than ability tests, this alternative form of measurement is not without its own limitations. Difficulties such as susceptibility to impression management, difficulty in establishing incremental validity over pre-existing personality constructs and assuming positively skewed domains are favourable (e.g. high EI is desirable) (Matthews et al., 2007) are criticisms commonly associated with the area of research and restrict the validity of claims supporting a link between EI and positive school outcomes (Wigelsworth et al., 2010).

Given the mixed models departure from the existing taxonomies of intelligence, there remains what has been described as “*semantic inconsistencies*” (Petrides & Furnham, 2001, p. 427) in regards to both the title “Emotional Intelligence” and its respective domains. In relation to the title it may be argued that it is inaccurate to use the term “emotional” as the model contains social aspects and focuses on the outcomes of traits which are far more consistent than emotional states. It is also inaccurate to describe the model as an “intelligence” given its departure from a cognitive framework. Although alternative developments of mixed model of EI have proposed alternative nomenclature (Petrides & Furnham, 2001), Goleman’s model has persisted with both the title and the common links with the ability model in the individual domains of “*self-awareness*” and “*managing emotions*”. Therefore there remains the question as to whether the mixed model has inherited some of the aforementioned difficulties of the ability model, namely difficulties with empirical validation, or whether the prescribed changes add new predictive validity (even at the expense of a common conceptual framework). For instance, with regard to managing emotions, Goleman cites the examples of anger, anxiety and depression, citing a common underlying construct that controls each. It should be noted that the two constructs are not mutually exclusive and can conceptually co-exist, therefore it is equally possible, that some (if arguably, not all) weaknesses of the prior model have been ‘carried over’. As SEL programmes, and specifically SEAL are based on this conceptual model, difficulties in validating the model will most likely be carried over as well, limiting its potential impact. Therefore, in light of these inconsistencies, there is a serious question as the potential implications as to how they impact upon teaching and learning of EI.

2.5.1 Implications for teaching & learning – The mixed model(s)

A distinct advantage in adopting a personality framework to EI is the implication for the teaching and learning of EI competencies. Unlike the ability model which implies a relatively fixed construct of a narrow range of abilities, the mixed model covers a much broader range of situations and also implies that the training, learning or practice of the skills will result in improved EI and a host of additional benefits (Murphy, 2006); this is one of the main drivers of Goleman's original text. Despite this significant advantage, this point must be considered with caution as evidence is still required to validate such a claim and several issues exist that limit the claims made supporting the model.

Lack of specificity

As noted previously, Goleman's mixed model is characterised by its wide-ranging, expansive definitions that include a range of situations and skills. Although such a liberal construct is sure to cover some beneficial aspect of personality or competency, the model is so broad; such a nebulous definition is at the expense of any unifying common element (Mayer & Cobb, 2000b). Therefore there is no link with any singular definable entity to which any favourable outcomes (such as behaviour, attendance, or attainment) can be attributed. Goleman's model is so encompassing as to include factors such as traits, values, personality, motivation, and character which could potentially be either independent of one another, or even conflicting (e.g. persistence vs. sensitivity) (Mayer & Cobb, 2000a).

Despite Goleman's assertions that such competencies are teachable, there is a serious question as to how to approach teaching such a nebulous concept? As there is a lack of a satisfactory framework, is it difficult to assess whether specific competencies are best delivered in a specific order (e.g. does the teaching of social skills require a certain level of empathy first?) or whether priority should be given to one domain over another (e.g. is managing emotions more directly attributable to 'life success' than self-awareness?). Given that the ethos of Goleman's work is to appeal to a practitioner audience, a lack of clear guidance as to the nature and construct of his model seems like an oversight. This suggests that programmes currently running (including the SEAL programme) may be operating without the 'full picture' necessary for a successful outcome.

The implications for teaching and learning are highlighted in the examples in the following section.

Additional difficulties with such an expansive concept include the inability to measure such a construct in a valid and meaningful way as clear conceptual criteria is required before constructing an accurate scale on which to measure such competences and to subsequently validate empirical claims made on this basis.

Assumption that EI is universally positive

Another difficulty, closely related to the lack of clear conceptual criteria is the inherent assumption that all aspects of EI contribute to successful life outcomes in a consistent and uniform fashion. To clarify this point, consider two possible scenarios;

A Surgeon seeks promotion. In line with Goleman's assertions that EI is responsible for a large degree of variation in success in the workplace, the surgeon studies the text in order to develop his own empathy, self-regulation and social skills, despite working the majority of the time independently and silently. Despite studying hard, he is passed for promotion as his surgical skills are not rated as high enough.

Self-awareness is taught to a pupil at school. He becomes more aware of his feelings, and realises that he experiences sadness by being bullied. Without a corresponding ability to regulate these emotions he becomes depressed and his school work suffers as a result, in line with Goleman's claims that such negative emotionality overwhelms ability to think (1996).

In the first example, we can see that offering EI as a panacea or universal approach is counter-intuitive in the simplest of examples. In the second example, it can be seen that components of EI may be weaker predictors than initially suggested or theoretically can even become damaging (Matthews et al., 2004b). There is empirical evidence to suggest such scenarios may have a basis in fact. Several researchers provide evidence of EI as a mediator between positive relationships and mental health (Matthews, Emo, Funke et al., 2006; Schutte, Malouff, Hall et al., 1998), for example, Petrides and Furnham (2004) found that individuals who reported as having 'high EI', were also sensitive to negative mood stimuli, leading to greater distress and negativity than those with lesser EI skills. Therefore it is possible that without full understanding or defining the mixed model of EI, the SEAL programme may be assessed as ineffective or potentially damaging.

Another exception to the universal acceptance of EI is evidence of individual differences in different cultures. Although emotional experience is assumed to remain relatively consistent across culture (Ghorbani, Bing, Watson, Davison, & Mack, 2002), cross-cultural studies have indicated some cultural differences in self-rated EI between North American and aboriginal youth (Parker, Saklofske, Shaughnessy et al., 2005) and Iranian and American samples (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). This indicates that cultural differences (such as individualistic versus communal societies) and the cultural expression or suppression of emotions may be significant (Rajendran, Downey, & Stough, 2007). This is an important point for culturally diverse schools and is discussed further in relation to the current study in section 4.7.1.

Inability to separate EI from existing constructs

Although Goleman claims that EI is a unitary construct distinct from IQ and traditional forms of intelligence, several authors have criticised the mixed model for being nothing more than a reconfigured model of basic personality traits (Mayer, 1999). On a theoretical basis, it is expected that there should be degree of similarity between Goleman's domains and those of established personality traits, as, for instance, people high in neuroticism (otherwise known as negative affectivity) tend to experience psychological distress such as anxiety, anger and depression (Watson & Clark, 1997). It is these emotions that Goleman cites in his "*managing emotions*" domain as regulated by high EI skills. Therefore there may be some theoretical relationship between neuroticism and skill in managing negative emotions, either on an interactional or reciprocal basis (Ciarrochi et al., 2002). When attempting to measure such a theoretical overlap, a certain degree of similarity is obviously to be expected as this would serve to confirm the interrelated nature of the construct in question. However, there still needs to be a distinct difference between the two constructs (e.g. individuals will score differently depending on the domain in question). Otherwise there is a danger of merely creating redundancy in test results and confusing the already complex arena of personality by measuring the same construct by a different name.

So far, researchers have failed to definitively distinguish between EI and existing personality traits, as studies attempting to differentiate between the two constructs report high correlations with various factors of the 'big five' personality traits such as extraversion, conscientiousness (Ciarrochi, Chan, & Caputi, 2000; Dawa & Hart, 2000; Van Rooy & Viswesvaran, 2004).

Given that researchers have been unable to separate the mixed model of EI from existing personality constructs, there is a question as to whether EI should be amalgamated into personality research (McCrae, 2000). There is questionable value in maintaining a separate construct that offers little unique contribution, especially given the inaccuracy of the title 'emotional intelligence'.

Although a lack of distinction between EI and personality research is a problem for psychological theorists, there is less of an impact on those attempting to teach or deliver EI. This is because validation of separate construct is not necessary for the identification of successful outcomes on the basis of teaching or delivering EI. However, there are a number of difficulties in providing evidence for the claims of EI, which are now discussed in the following subsection.

Lack of published research validating original claims

Although one may argue that the range of criticisms directed at the mixed model of EI are predominantly theoretical in nature, and do not damage the applicability of the construct, this is dependent on the production of valid results in an applied setting. As previously mentioned, Goleman makes several substantial claims in regards to the model's practical application in a variety of domains. However, many of these claims put forward have not been substantiated by empirical research (Van Rooy & Viswesvaran, 2004). One startling example is the previously cited claim that EI is responsible for 20% of the variance of in life success. A range of empirical studies have been unable to replicate or even approach such a figure, and figures are closer to 1-3% unique variance in predicting job performance or life satisfaction (Gannon & Ranzijn, 2005; Malika & Stephen, 2008). Similar difficulty has occurred attempting to reconcile claims of neuro-scientific evidence within Goleman's book. Although the basic explanations of Goleman's model is supported by current work, e.g. the amygdala is responsible for filtering of emotional content, and that lesions in these areas do produce deficits in behaviours related to emotion (Berntson, Bechara, Damasio, Tranel, & Cacioppo, 2007), it is an unqualified leap to infer, let alone explicitly state such a link within an applied setting or as a causal explanation for individual differences in performance. Such evidence is also contradictory to the proposed framework of personality, as psycho-physiological studies of personality implicate a wide range of brain structures and processes (Zuckerman, 1999) making the biological basis for a mixed model of EI highly dubious. There is certainly no evidence supporting the teaching EI and a corresponding change in brain structure,

or that individuals would be biologically impaired by not learning EI skills or competencies. Such misrepresentation of neuro-scientific evidence is not unique to the mixed model of EI (Goswami, 2004). However, it does mean that practitioners not versed in assessing the validity of such claims also incorrectly promote the inflated validity of the models' practical application. Although it may be premature to reject the mixed model in its entirety on the basis of unsubstantiated claims, it is clear that that production of evidence to support such claims is currently lacking.

2.5.2 Can EI be schooled?

“Currently, the successful schooling of EI is undetermined” (Zeidner et al., 2002, p. 215)

It should be clear that neither approach (ability or mixed) is able to produce a satisfactory model on which EI could be taught with confidence. Both models suffer from a lack of a clear conceptual criteria and each has several fundamental flaws.

In the case of the ability model, difficulty in producing a clear conceptual definition is matched with unsuccessful efforts in validating the model as a form of intelligence, added to which a range of measurement difficulties hamper the collection of empirical evidence into its potential success. Even without the methodological difficulties, conceptual models of traditional intelligence suggest a seriously limited range of 'real life ability' would be practical, even if such skills were considered to be teachable or learnable. The direction of current research into the ability model is progressively focused on producing a model that is scientifically rigorous but practically meaningless (Murphy, 2006).

In the case of the mixed model, although appealing to a much wider audience, it attempts to create a definition by exclusion rather than inclusion of criteria. Difficulties in producing a valid scale are bypassed in favour of producing a model which has practical application outside of psychology journals. However, this is at the expense of providing an evidence base that satisfies the academic critics, and puts at risk the practitioners who apply its principles without a scientifically validated background (Murphy, 2006).

With regards to their theoretical development, it is unlikely there will be a trumping of one model over the other, either through advancement in the scientific rigour of studying intelligence, or through the acceptance of a mixed model with a popular

audience. The complexity of the issues suggests the unique problems faced within each model show no resolution in the foreseeable future. The utility of the ability model as a practical application is unlikely to be advanced very far without the refinement and validation of the construct, although future advancements are likely to narrow and further constrain the model's practical application. Similarly, the mixed model contains such a wide variety of domains, that there has to be a degree of realism in regards to about how well it can be validated as a model, especially given its main application is out of the hands of academics and evaluators and that its principles are altered and customised to suit the whims of practitioners (see section 3.4.2). In order to advance current research (for both practitioners and academics), it may be worth considering whether there is scope for the models to offer some form of combined approach. As mentioned previously, there are not mutually exclusive, and the field may require some form of mutually beneficial approach in order to advance.

As the focus of the thesis is in validating the practical application of the practitioner based approach (e.g showing objective favourable outcomes as a result of the SEAL programme), it must be considered how to validate such goals, and in doing so, consider what strengths the comparative models offer. There is a need to advance both the scientific rigour of the mixed model and also to assess the practical benefits of the ability model. In an effort to bridge the current chasm between the two approaches or 'cultures' (Murphy, 2006), a pragmatic approach (e.g. judging what is appropriate or useful (see section 4.3)) will be applied to the literature detailing current SEL programmes. In line with such an approach, the 'utility' (Patton, 2002) or appropriate use of EI will be assessed in order to validate the pre-existing evidence base for SEAL. For instance, such an approach would mean that programmes can be evaluated in the absence of a scientific framework providing there is some form of rigorous evidence of beneficial outcomes. This is because the end users (practitioners and pupils - recipients of the SEAL programme) do not require a scientifically validated framework in order to produce beneficial outcomes, but they do require scientifically validated evidence that any approach actually works. To do this, the quality of the evidence presented in support of SEL programmes will be assessed.

2.6 Chapter summary

This chapter has presented an overview of important literature explaining the origins of the theoretical framework that supports SEL programmes, specifically the development of two major conceptualisations of emotional intelligence.

The ability model of EI was analysed in relation to its potential as a construct for influencing favourable outcomes, such as those included in the SEAL materials. Current literature suggests that there is a small amount of evidence of a relationship between ability EI and favourable pupil outcomes. However, difficulties in producing valid measurement instruments and the ability models position as a type of intelligence suggest that any potential gains from the ability model are likely to be modest. These findings are important, as the ability model is the foundation for the subsequent expansion of the concept of EI by the mixed model(s) of EI, on which SEAL is closely modelled.

An analysis of the literature surrounding the mixed model of EI suggests that although the claims made by the mixed model of EI support those of the SEAL materials, there is little direct evidence to support any observation of such benefits being seen in practise. Furthermore, criticisms of lack of specificity and difficulty in separating the mixed model from existing personality constructs casts doubt on its capability to impact on upon favourable pupil outcomes to the extent claimed in the SEAL materials.

Therefore, in reference to the essential pre-requisites for successful impact (see Table 1.3, the prior literature review suggests that the mixed model of emotional intelligence may not be the most appropriate vehicle for delivering pupil outcomes. However, this statement is considered presumptuous without first considering the evidence from already established programmes which utilise similar frameworks.

3

3 Applying EI: Design, process & assessment of SEL programmes

3.1 Introduction to chapter

The aim of this chapter is to critically examine the diverse range of social and emotional learning (SEL) programmes, designed to enhance pupil based skills and behaviours through the use of EI.

As the various programmes discussed in the chapter provide the prior evidence for the SEAL programme, it is important to examine various aspects of their design as well findings from prior evaluations. Such an examination is particularly important as SEL programmes vary to great extent in relation to their EI content and method of delivery, as well as the quality and frequency of evaluation.

The chapter begins by defining SEL to make explicit the links between EI and the wider outcomes of social and emotional based learning. The lack of a clear definition is also discussed in relation to the difficulty in identifying a particular effect of EI within a SEL programme.

The chapter continues by discussing the various ways in which SEL programmes differ. Particular attention is paid to the focus of the intervention (in which the wide range of programme goals is shown with examples). Next, the nature of intervention and the method of delivery is discussed, with a proposal for an alternative format for classifying the range of programmes available. Furthermore, the actual level of EI content of various SEL programmes is discussed, and this has particular importance for comparing to the current SEAL programme, as SEAL appears to be arguably unique in its faithful adoption of Goleman's domains as its own practical framework.

Next, the chapter progresses with a discussion of prior evaluations of SEL programmes. As mentioned, there is a great deal of variety amongst the various studies of interventions, and therefore it is particularly important in relation to SEAL to establish the rigour and validity of results produced from these studies. The section examines the variation in rigour of prior evaluations, including lack of peer review, limitations in methodological design and reporting of results. A protocol for assessing the relative value of evaluation studies is presented. The importance of the quality and the variation in implementation of programmes is also briefly discussed.

The penultimate section compares a number of divergences between UK and US approaches to SEL as well as subsequent differences in approaches to assessment. This section suggests that such discrepancies between both programme and approach means that the majority of US based research may have limited application in a UK context, and presents alternative findings from a number of UK studies. This is important as UK programmes more closely approximate the methods described in the SEAL programme materials. The importance and cultural differences in programme implementation is also highlighted.

The chapter concludes by presenting a rationale for the study with accompanying research questions.

3.2 Introducing SEL programmes

“The great tragedy of Science – The slaying of a beautiful hypothesis by an ugly fact” Thomas Huxley (1870, p. 244)

The popularity of Social and Emotional Learning (SEL) programmes surfaced alongside the rise of EI in the early 1990’s to increasingly influence national education policies and practice in the way children and students are educated. The origins of SEL principles and the development of educational programmes to support SEL are closely linked with the publication of Goleman’s book, *“Emotional Intelligence”* and its subsequent proliferation throughout popular literature (Zins & Elias, 2006). A range of interest groups have arisen since the popular acceptance of the benefits of teaching EI based skills, the largest (and arguably most influential) being The Collaborative for Academic, Social and Emotional Learning (CASEL) (of which Goleman is a founder member). Organisations such as these are mainly

concerned with the perception of schools increasing failure to educate children in the 'essential skills' identified in Goleman's writings (Cherniss et al., 2006).

The range of SEL programmes available to schools has expanded since Goleman's original publication to include a diverse set of initiatives (see section 3.4.1). However, they are still predominantly designed to either address a specific need outside the academic curriculum such as physical health, problem solving or conflict resolution skills or to universally promote favourable skills, most commonly associated with the underlying principles of the mixed models of EI (Bar-On & Parker, 2004; Goleman, 1996). SEL programmes are commonly promoted on the basis of rising concerns over negative trends in pupil's attitudes and behaviours. The increasing responsibility placed on schools to educate beyond the academic curriculum has aided in the development and proliferation of programmes designed to tackle these perceived problem behaviours and deliver the proposed benefits of EI in an educational setting. The influence of various interest groups formed for the promotion of SEL principles and its popular support at the authority, district, or state level (in the case of the USA) is evidenced by the introduction of legislature supporting the teaching of SEL in schools. Examples within the USA include the Illinois Children's mental health act (Hamos, Bellock, Coulson, Lang, & Collins, 2003) (the first American state to develop specific standards for the implementation of SEL programmes for schools) which cites children's social and emotional development as essential skills for academic success (Illinois State Board of Education, 2006). In the UK, several examples have already been provided such as the teaching and learning review (Department for Education and Skills, 2006a) and the Governmental policy document 'Every Child Matters' (Department for Education and Skills, 2003). These examples are discussed in more detail in section 1.4.1 (The role of EI in the English education system).

It is an interesting side note that although the USA is acknowledged to be both the founder and by far the largest producer of SEL programmes and research, governmental level policy does not reflect a commitment to social and emotional learning to the same extent as the UK. For instance, given two recent publications guiding national policy, namely, 'Every Child matters' (Department for Education and Skills, 2003) in the UK and 'No Child Left Behind' (Us Department of Education, 2001) in the US, the responsibility of schools to deliver a holistic education, beyond academic grades is far less a priority in the American policy document (Kress & Elias, 2006; Shriver & Weissberg, 2005). Given the vast differences between the two cultures in terms of levels of governmental control, structure of educational

departments and the unique stressors and strains within the culture of an educational system, any clear-cut explanation would be very complex and beyond the scope of this thesis. However, having highlighted these issues, it is worth bearing in mind when considering the transferability or suitability of adapted US programmes (see section 3.5)

3.3 Defining SEL

In contrast to the multiple definitions of EI, there is largely a consensus as to the common factors that create a core of SEL competencies. This is mainly due to the efforts of the aforementioned influential organisation, originating from the United States, who task themselves with the dissemination, support and publication of SEL principles. The ‘Collaborative for Academic, Social, and Emotional Learning’ (CASEL) define SEL as:

“Is the process of developing fundamental social and emotional competencies in children.” (Collaborative for Academic Social and Emotional Learning, 2003 p.5)

To clarify this definition, CASEL claim that the outcome of SEL programmes should be increased social and emotional competence, which imbues children with a range of skills:

“Socially and emotionally competent children are ... self-aware... able to regulate their emotions... able to manage stress, control impulses, and persevere in overcoming obstacles... socially aware... [and are able to] empathise with others... They have good relationship skills” (Collaborative for Academic Social and Emotional Learning, 2003 p.5)

As previously mentioned, it is the publication of Goleman’s work that provided the basis for the CASEL’s definition of SEL principles (Elias et al., 1997). This is due to its appeal to a practitioner audience, its practise driven ethos and its claims of favourable outcomes being particularly suited to an educational environment. A direct comparison between Goleman’s definition of EI and CASEL’s definition of SEL is seen in Table 3.1.

Goleman's Domains of EI	CASEL's components of SEL
<p>Self-Awareness Knowing one's emotions, recognising a feeling as it happens... ability to monitor feelings from moment to moment"</p>	<p>Self-awareness accurately assessing one's feelings, interests, values, and strengths; maintaining a well-grounded sense of self-confidence</p>
<p>Managing Emotions "Handling feelings. Capacity to sooth oneself, shake off rampant anxiety, gloom or irritability"</p>	<p>Self-Management Regulating one's emotions to handle stress, control impulses, and persevere in overcoming obstacles; setting and monitoring progress toward personal and academic goals; expressing emotions appropriately</p>
<p>Motivation "Marshalling emotions in the service of a goal...paying attention...self-motivation...emotional self-control... delaying gratification and stifling impulsiveness"</p>	
<p>Empathy (Recognising emotions in others) The fundamental people skill..."</p>	<p>Social awareness being able to take the perspective of and empathize with others; recognizing and appreciating individual and group similarities and differences; recognizing and using family, school, and community resources</p>
<p>Social skills (Handling relationships) <i>Skill in managing emotions in others"</i></p>	<p>Relationship skills establishing and maintaining healthy and rewarding relationships based on cooperation; resisting inappropriate social pressure; preventing, managing, and resolving interpersonal conflict; seeking help when needed</p>
	<p>Responsible decision-making making decisions based on consideration of ethical standards, safety concerns, appropriate social norms, respect for others, and likely consequences of various actions; applying decision-making skills to academic and social situations; contributing to the well-being of one's school and community</p>

Table 3.1 Comparison of Goleman's and CASEL's Domains

At first glance there appears to be a strong common link between Goleman's domains of EI and their practical application in being classified as factors in SEL programmes. However, the level of strategic fit is limited to surface features only as

CASEL's adaptations to suit an educational context has created several significant discrepancies in meaning compared to Goleman's original conceptualisation.

For the domains "*self-awareness*" and "*self-management*" (managing feelings), although the domains themselves are included, CASEL's definitions confuse the beneficial outcomes of the competency with the competency itself. In the case of "*self-awareness*", this is evidenced by the inclusion of the phrase "*maintaining a well-grounded sense of self confidence*" (www.casel.org). Self-confidence, self-concept or self-esteem are commonly considered to be a result of a developmental trajectory (Harter & Pike, 1984; Shirk & Renouf, 1992) mediated by interactions with a variety of cognitive, social and physical factors (Lawrence, 2002). Whereas the cognitive or personality framework of EI might arguably be considered part of these factors, there is absolutely no evidence to suggest that either as a theoretical construct or as a practical application that EI is solely responsible for producing self-confidence in adolescent development. This is especially true given that self-confidence is accepted to be partially constructed by comparison with other people (Harter, 1999) and the domain of self-awareness is entirely intra-personal. A similar confusion is made in the domain of self-management. In regards to both Goleman's and Salovey & Mayer's models (as the source of Goleman's conceptualisation), the domain of managing emotions has been used to describe the 'active regulation of emotional states' (Table 3.1). Similar to the idea of self-control, this ability, either cognitive (in the case of Salovey and Mayer) or as a function of personality (in the case of the mixed model) does not extend beyond the handling of the direct and current feelings being experienced at a particular time that would otherwise influence judgement or decision making. Practical examples of this ability include preventing feelings of panic when sitting an exam or controlling emotions such as elation on hearing good news, whilst driving a car. Both examples highlight the direct link between the emotion experienced and the direct regulation of that emotion. It is therefore difficult to reconcile CASEL's inclusion of "*setting and monitoring progress towards personal and academic goals*" in their definition.

Such skills requiring forward planning and monitoring are highlighted in another of Goleman's domains, 'motivation' which is absent from CASEL's definition. Whereas Goleman draws a distinction between the "*managing of emotions to maintain a positive state of wellbeing*", and the "*active marshalling of emotions in the service of a goal*" in regards to motivation, Goleman (2000, p.317) appears content that these components are indistinguishable. Goleman seems equally content to suggest the managing of emotions is a long term activity over the period of the goals set. This

implies a vastly increased domain beyond the direct handling of emotion. To highlight this difference, the following examples are provided:

A pupil is sitting an exam; he has not revised and is having difficulty in answering the questions. This leads to feelings of panic and despair at the thought of failing. The pupil attempts to manage their emotions in order to continue answering as many questions as they can in order to achieve the best mark possible rather than succumb to panic.

An alternative scenario is presented in the second example:

It is three weeks before the exam. The pupil experiences feelings of panic and realises that failing the exam would be bad. Instead of panicking, the pupil sets out a time table for revision. Each day they make sure to dedicate the appropriate time to study. The pupil monitors their progress throughout their revision to ensure all the appropriate material is covered in time for the exam.

The first example shows the how the component of emotional management can be theoretically applied in order to receive beneficial outcomes such as increased academic attainment. The second example shows that although an element of emotional management may help facilitate additional skills, such as planning and timetabling, *it is not an aspect of the domain itself*. Such a distinction is also supported in other theoretical models of emotional competence which also limit their management skills to just that of emotions (Bar-On, 1997; Saarni, 2000).

This distinction is an important point for two reasons. Firstly, there is no evidence that such direct relationships exist and therefore implying such a link exists is misleading. In both examples, such a link is contrary to existing knowledge. In the case of self-awareness, it is implied that an interpersonal skill is able to contribute to inter-personal interactions when assessing one's own self-concept. In the case of self-management monitoring and setting goals, it is generally considered a cognitive ability (Sternberg, 1997). Such cognitions (as discussed) are not included in Goleman's conceptualisation of EI (see section 2.4); therefore their inclusion in CASEL's definition is unsubstantiated in regards to underlying psychological theory (regardless of the amount of criticism directed at the theory itself).

The second reason is that because beneficial outcomes such as self-confidence, forward planning or academic achievement can be mediated by other constructs such as self-efficacy, previously acquired knowledge, or, cognitive problem solving skills. These factors must be taken into account to accurately assess the relative

worth of the original construct. For instance, it is difficult to make claims as to the value of skills in managing emotions to achieve goals without understanding how much prior knowledge or experience an individual has, how much an individual believes they are capable of such goals or how much cognitive ability they are able to apply, as these may be more significant factors than the skill of management itself.

A similar adaptation of Goleman's other domains, namely those of empathy and social skills (renamed social awareness and relationship skills respectively) are evident, although not to the same extent to alter the underlying psychological theory. For instance, "*empathy*" (renamed social awareness) has been adapted to include the recognition of group differences and the availability of school and community resources. "*Social skills*" also recognise specifically resolving interpersonal conflict, a factor particularly suited to the school environment.

A more substantial adaptation is the creation of a domain entitled "*responsible decision making*". This domain represents a departure from EI as the basis of underlying theory of SEL and instead reflects the foundations of a group of previous school intervention programmes focused on the principles of preventing risk taking behaviours (e.g. drug taking, alcohol consumption or tobacco use) on the basis of good decision making and refusal skills (Collaborative for Academic Social and Emotional Learning (CASEL), 2003). Decision making skills are one of the components of programmes designed to prevent or reduce problem behaviours before the inception of SEL principles as a definable construct in school based programmes. Several interventions prior the founding of CASEL have 'good decision making' and refusal skills as part of the programme aims which typify the nature of a more limited curricular with a specific focus. For instance, The Drugs Abuse Resistance Education (DARE) programme was originally founded in 1983, prior to the rise of EI and SEL and is a school based curriculum designed to teach children from kindergarten to 12th grade on resisting potential peer pressure in relation to drug abuse (D.A.R.E., 1996). Other examples include the Resolving Conflict Creatively Programme and Peace builders' programme, which targets the handling of conflict and violence through techniques such as perspective taking, cost-benefit analysis, decision making, and negotiation (Dejong, 1994). Prior to the popular dissemination of SEL literature, these programmes did not promote SEL skills as part of their programme design or as one of the favourable outcomes of implementing the programme. By including the domain of "*responsible decision making*" in SEL's principles, it is an acknowledgement that the underlying psychological construct of EI is not the only guiding principle to be included in a SEL programme, therefore SEL

programmes are promoted without necessarily EI as the underlying psychological framework, as is the case with the DARE programme. To this end, SEL is considered a framework for programmes supporting the rather defuse area of social and emotional learning (Elias et al., 1997) (see Figure 3.1).

The outcome of these adaptations serves to inflate the expected outcomes of EI based programmes, especially those which remain faithful to the original framework such as SEAL. This presents rather serious difficulties in identifying common factors of success between programmes, especially in regards to EI as an underlying programme theory. As the above examples demonstrate, EI content can be virtually non-existent, therefore making comparisons between programmes such as DARE and SEAL inaccurate or misleading as it is difficult to judge which particular component is responsible for a change in pupil behaviour or skills. Equally, it is inappropriate to consider changes in one particular domain as evidence for expected gains in another. For instance, a SEL programme dedicated to promoting pupils decision making skills should not be used to support and EI based programme designed to promote social skills. In this regard, a diverse set of adapted programmes are being used to support the EI based programme of SEAL.

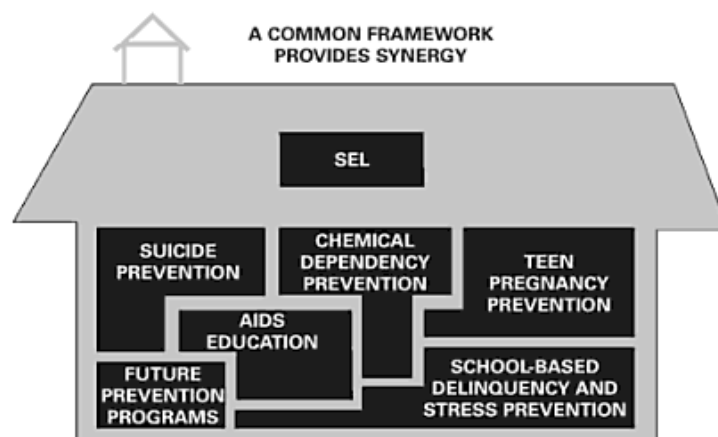


Figure 3.1 Framework for SEL (Elias, et al. 1997)

3.4 SEL as a framework

Through the use of a collection of favoured concepts, rather than a united psychological theory, SEL principles work as a framework or 'umbrella' to encompass

a diverse range of programmes. These programmes differ, not only on the basis of their topic or focus (which are broad), but also on the basis of their underlying theories, target age range, intended audience, prevention or promotion and the nature and extent of their intended outcomes (Ciarrochi et al., 2001b; Clouder, 2008). As it is this diverse range of programmes on which the evidence base for SEAL is derived, the strength of the evidence and the extent to which other programmes provide a framework for SEAL is now assessed.

3.4.1 Focus of intervention

Current SEL programmes vary in their intended outcomes and are designed to target a range of behaviours and topics, including:

- Mental health
- Anti- bullying
- Pro-Social skills / pro social norms
- Cognitive competence
- Problem solving
- Conflict resolution
- Violence prevention
- Self-Esteem / Self Efficacy
- Moral / Spiritual development
- Drugs and alcohol resilience
- Suicide prevention
- Health education (e.g. HIV / AIDS / Sexual health / pregnancy)
- Civics
- Resilience
- Multi-component - containing more than one category (Topping, Holmes, & Bremner, 2000)
-

Table 3.2 shows a selection of programmes identified by CASEL and other agencies (Zins, Elias, Harris, Heron, & Margolis, 2000) as examples of SEL programmes currently in operation in schools around the world. All of the programmes displayed in Table 3.2 are considered to be 'well known' programmes as they available nationally in at least the UK or US, are aimed at the general school body, contain at least some form of taught content no less than eight sessions long, and provide

content for at least two consecutive years of school. All programmes claim at least some element or content that is in keeping with SEL principles. As is clearly evident from Table 3.2, the current range of SEL programmes is truly diverse, both in the range of topics available, but also in regards to the amount of EI based content present in each programme. There are several reasons for such an expansive range of programmes.

Firstly, given such a liberal definition of what constitutes SEL, many pre-existing programmes immediately fall under CASEL's principles by default, especially programmes that promote inter-personal or social content, which are necessary factors for many violence prevention, pro-social behaviour promotion or community focused programmes even if they do not contain any subsidiary intra-personal content (e.g. managing feelings or self-awareness).

Secondly, given the popular appeal of SEL as a framework for favourable pupil outcomes, many programmes have adapted their design in order to incorporate components that are popular and recognisable to educational practitioners, either as part of the programme design, or as an additional favourable outcome (e.g. 'AI's Pals'). However, as will be discussed, programmes that alter their content to include SEL as either a process or an outcome, do not necessarily reflect deeper changes in the underlying theory of the intervention and therefore do not necessarily utilise the basis of EI as a vehicle for better pupil outcomes beyond its ability to market the actual product.

Thirdly, new programmes have been developed as a result of EI publications and attempt to deliver EI rather than SEL principles as their intended outcomes (e.g. SEAL or PATHS). In this way, existing programmes can be classified in one of three different ways;

- Programme design fits into one or more SEL principles but is otherwise dedicated towards a specific goal(e.g. violence prevention)
- Programme design has been adapted to include SEL either as part of the process or as a programme outcomes
- Programme has been specially designed with EI principles and therefore shares commonality with SEL principles

As can be seen from Table 3.2, such diverse programme design means there is a question as to the extent to which programmes either compare to SEAL or belong under a united framework at all. These issues are now discussed.

Programme	Reported Primary Purpose	Mental Health	Anti-Bullying	Problem Solving	Conflict Resolution / Violence Prevention	Substance Abuse	Physical Health	Citizenship	Character Dev.	Self Esteem	Resilience	EI / CASEL Domains						Evidence of Evaluation
												Inter Personal				Intra-personal		
												Self-Awareness	Self-management	Responsible decision making	Motivation	Social awareness	Relationship Skills	
Aban Aya Youth Project (Segawa, Ngwe, Li, Flay, & Aban Aya, 2005)	Prevention of teen pregnancy Violence Prevention						√						√	√			√	
Al's Pals (Lynch, Geller, & Schmidt, 2004)	social-emotional skills problem-solving Substance Abuse Bullying		√	√	√	√			√		√	√	√	√	√		√	
Americans All (www.americansall.com)	Citizenship Education							√					√				X	
Bounce Back! (www.bounceback.com.au)	Resiliency										√	√	√	√	√		X	
Caring School Community (CDP) (Battistich, Schaps, & Wilson, 2004)	classroom and school wide community				√										√	√	√	
Connecting with others (Coombs-Richardson, 1996)	Social Skills													√			√	
Creating a Peaceful School	Anti-Violence		√		√							√	√	√			√	

Environment (CAPSLE) (Fonagy, Twemlow, Vernberg, Sacco, & Little, 2005)	Bullying																		
Drug Abuse Resistance Education (DARE) (Darnell & Emshoff, 2008)	Drugs Education					√								√					√
Discover: Skills for Life (Thompson & Strange, 1992)	Substance Abuse Conflict Resolution				√	√													X
Efficacy Curriculum (The Efficacy Institute, 2009)	Intellectual capacity building										√			√	√				√
Esteem Builders (Borba, Borba, & Reasoner, 2000)	Self Esteem									√	√	√	√						√
Gemstones (www.dreaminc.org)	Drugs Education					√								√					X
Get real about AIDS (Main, Iverson, Mcgloin et al.)							√						√		√				√
Giraffe's Hero Project (www.giraffe.org)	Citizenship Education							√	√										X
Great Body Shop (www.thegreatbodyshop.net)	Substance Social and Emotional Health Character Education Violence Prevention				√	√	√			√			√		√		√		X
Growing Healthy (Connell, 1985)	Health Education						√						√						√
I Can Problem Solve (Shure, 1992)	interpersonal cognitive problem solving skills				√								√		√		√		√
Know Your Body	Health Promotion					√							√		√				√

(Taggart, Bush, Zuckerman, & Theiss, 1990)																		
Learning for Life (www.learningforlife.org.uk)	Character Development									√		√	√		√			X
Life Skills Training (Botvin, Griffin, & Nichols, 2006)	Substance Abuse					√						√		√				√
Lions-Quest (Eisem, Zellman, & Murray, 2003)	Substance Abuse Positive Mental Health	√	√			√			√	√		√	√	√	√	√	√	√
Michigan Model for Comprehensive Health Education (www.emc.cmich.edu)	Substance Abuse Health Education					√	√						√	√				√
No Putdowns (Wright, Stein, & Pelcher, 2006)	violence prevention character development substance abuse life-skill building					√				√					√	√		√
Passport Programme (Vernon, 1990)	mental health relationship skills, problem-solving emotional management	√		√									√	√			√	X
PATHS (Domitrovich, Cortes, & Greenberg, 2007)												√	√	√		√	√	√
Peace builders (Vazsonyi, Belliston, & Flannery, 2004)	Violence Prevention Character Development		√		√				√						√	√		√

Peace works (Powell et al., 1995)	Conflict Resolution				√								√	√		√	√	√
Positive Action (Snyder, Vuchinich, Acock et al., In Press)	Self-Improvement Violence Prevention Substance Abuse	√				√	√		√	√	√	√	√	√	√	√	√	√
Productive Conflict Resolution Programme (Aber et al., 1998)	Conflict Resolution				√									√		√	√	√
Project Achieve (www.projectachieve.info)	School Improvement			√					√			√	√	√	√	√	√	X
Project: Citizen (www.civiced.org)	Citizenship Education							√						√				X
Project Northland (Komro, Perry, Veblen- Mortenson et al., 2004)	Substance Abuse					√								√				√
Project TNT (Sussman, Dent, Stacy et al., 1993)	Substance Abuse					√								√				√
SEAL (Department for Education and Skills, 2007a)	Social Emotional Skills	√	√						√			√	√		√	√	√	X
Responsive Classroom (www.responsiveclassroom.org)	Social Emotional Skills	√	√	√					√			√	√	√	√	√	√	√
Resolving Conflict Creatively (Aber et al., 1998)	Violence Prevention				√							√	√			√	√	√
Second Step (Cook, Ford, Levine et al., 2007)	Violence Prevention			√	√							√	√	√	√	√	√	√
Social Decision making and	social and			√	√	√					√	√	√		√	√	√	√

Problem Solving (Clabby & Elias, 1999)	decision-making skills																	
Tribes (www.tribes.com)	Positive School Environment	√	√		√						√	√	√	√		√	√	√

Table 3.2 - Intended programme outcomes of CASEL select SEL programmes

3.4.2 Nature of intervention

In addition to the wide scope of programme targets, the various interventions also differ by the way the programme is delivered in school, which can vary quite significantly. For instance, some programmes are class-based and are designed predominately around the delivery of an explicit curriculum to specific classes. Other programmes attempt to alter the ethos of a school through more general material (e.g. anti-bullying posters) or by providing more focused professional development in an effort to have teachers change the way they think and behave, for instance with pupil interaction or how they deal with bullying training. Although the majority of SEL programmes contain at least some element of staff training or continuing professional development, there are some exceptions with the more specific or targeted programmes, for instance DARE is delivered by police staff rather than teachers. Other similar universal or 'holistic' (Weare & Gray, 2003) programmes go a step further and include parents and members of the community (e.g. local police, youth groups, parents) in effecting change at the whole school level. (Ciarrochi et al., 2001b) provide a classification system for these approaches;

- Targeted prevention
- Classroom climate structures
- School Level organisational structures
- Social Competence enhancement
- Comprehensive health education
- Multi-component

This classification does not necessarily create exclusive categories as both health education and social competence programmes can be classified as classroom or school level structures. Therefore an alternative system of classification suggested (see Figure 3.2):

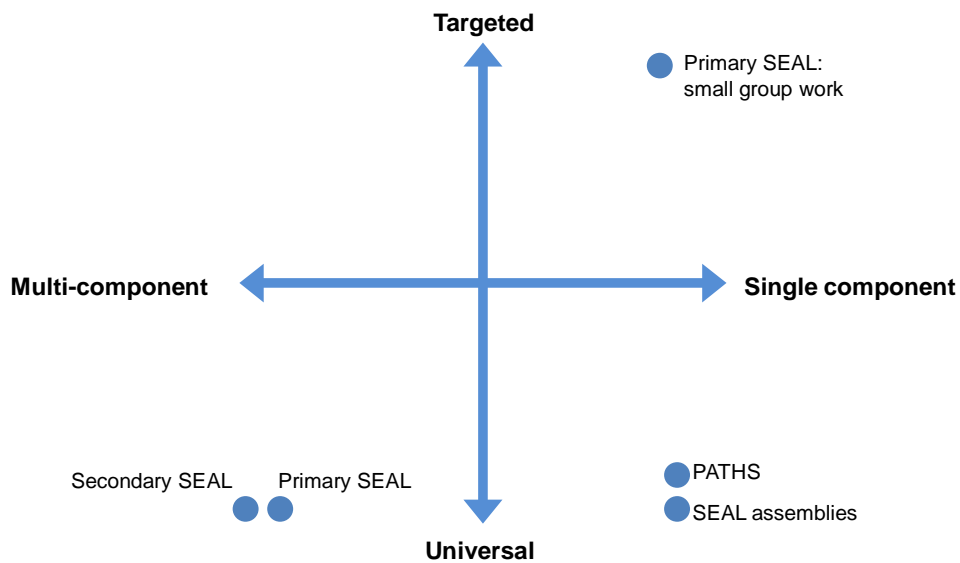


Figure 3.2 Suggested classification of SEL programmes

The alternate classification proposed in Figure 3.2 has the advantage of viewing SEL programmes on a continuum of two dimensions, allowing a more graduated rather than categorical approach to classifying programmes. The vertical axis represents the extent to which an individual intervention targets specific individuals or groups. A programme that is specifically targeted would belong at the top of the diagram, whereas a more general, or universal programme that does not differentiate between ability, age or individual needs would belong at the bottom of the chart. For example, the small group work component of Primary SEAL is designed specifically for a small number of pupils per class who would benefit from additional intervention (Department for Education and Skills, 2006b). Conversely, Secondary SEAL is an example of a universal programme as it does not target individual pupils and it is expected that every pupil in a school should receive at least some benefit.

The second dimension in classifying a SEL programme is the number of components contained within the intervention. Some SEL programmes comprise of a singular unit, such as set number of lessons, whereas other programmes contain many elements, such as an explicit curricula, parental involvement, community links, etc. For example, SEAL (both Primary and Secondary) are classified as multi component, as they both contain elements of explicit teaching, staff development, small group work (primary), assemblies, and also recommend community involvement. This is in

contrast to the PATHS programme, which is defined by its explicit curriculum for use in specific lessons. Evidence for successful impact has varied on the basis of the level and nature of multiple components (Adi, 2007) and therefore it is important to specify both the extent to which a programme contains additional materials, and what the additional materials comprise of.

Such variety in the type and nature of current SEL programmes poses a major difficulty in providing a common basis for generalising the findings from any individual programme to support a single framework for SEL. One element of this difficulty is methodological. For instance, class based, curricular materials are typically assessed by comparing a class receiving the intervention with a control class in the same year, either in the same school (Kelly, Longbottom, Potts, & Williamson, 2004) or in different schools (Battistich, Solomon, Watson, Solomon, & Schaps, 1989; Kam, Greenberg, & Walls, 2003) in order to identify changes in favourable outcomes over time. Whereas the methodological limitations of such an approach are discussed in a later section (see 3.4.4 Rigour of evaluation), the current issue is the transferability of these results. Changes in the ethos of the school and other associated factors of whole school approaches (e.g. school climate, belongingness, community) (Battistich, Solomon, Kim, Watson, & Schaps, 1995) cannot be assessed using class based comparisons, as the whole school is intended to benefit from the intervention. Therefore, programmes evaluated using class comparisons (either pre / post-test or longitudinal designs) cannot be used as evidence supporting universal or whole school components of multi-component or holistic programmes (Wells, 2003). However, the literature does not always make this distinction as SEL programmes are commonly considered a relatively homogenous group in their ability to produce favourable outcomes (Cohen, 1999; Collaborative for Academic Social and Emotional Learning, 2003; Durlak et al., in press; Elias et al., 1997; Weare & Gray, 2003).

In the case of SEAL, the programme is designed as a whole school initiative, ideally including parents and community and is intended to alter several operational aspects of school policy such as lesson plans, behavioural policy, and teaching methods (Department for Education and Skills, 2007a). Although other SEL programmes are used to support the overwhelming evidence' (Weare & Gray, 2003) for the potential success of the SEAL programme, it would be inaccurate to compare results based on class based curricula as evidence of a whole school approach.

3.4.3 Level of SEL / EI content

“No one program exists that exclusively addresses the full gamut of emotional processes and skills subsumed under the various conceptions of EI” – (Zeidner et al. 2002 p .215)

As previously mentioned, a major difficulty in the assessment and evaluation of SEL programmes is the extent to which EI is represented as a construct for the teaching and learning of EI based skills. Current SEL programmes vary widely on the level of EI content contained within a programme, which in some cases is virtually non-existent. This is partly due to the modular construction of the SEL domains. The wide range of possible topics and targets contained within the encompassing definitions (see Table 3.1) means a programme need only contain or refer to one particular aspect of EI in order to be classified as a SEL programme. This criticism applies to both programmes that have existed before the popular dissemination of SEL principles and have been retroactively identified as SEL programmes and also programmes that have adapted their materials in order to be included with the general promotion of SEL materials (e.g. AI's Pals). The consequence of this difficulty is that there is a large range of diverse programmes being used to support the principle of teaching and learning EI skills, but the majority of the programmes do not represent EI as a unified construct. This has three important implications.

First, the evidence presented in support of SEL programmes is very difficult to assess as it is inaccurate to represent the range of programmes as one category, given their extremely diverse aims and outcomes (as displayed in Table 3.2).

Second, even when programmes that contain EI content are identified, there is usually an unbalanced representation of the domains of EI in the programmes materials. Several programmes are dedicated to almost exclusively intra personal (motivation / managing feelings / self-regulation) skills or to inter personal (empathy / social skills) competencies.

Third, despite advertising EI skills as part of the programme materials, several SEL programmes do not use EI as the underlying theory of the programme and are instead based on other theoretical approaches that may or may not be compatible with EI based outcomes (Zeidner et al., 2002).

In relation to the first point, the diversity in both process and outcome of current SEL programmes is not adequately reflected in the majority of the literature, which tends to view SEL programmes as a group far more homogenous than the current situation suggests (Elias et al., 1997; Cohen, 1999; Collaborative for Academic Social and Emotional Learning, 2003; Weare & Gray, 2003; Durlak, Under Review). To highlight the point, several programmes are presented as examples:

One programme, included by CASEL in a review of SEL programmes (Collaborative for Academic Social and Emotional Learning, 2003), but containing virtually no content compatible EI principles is the “Giraffe’s Hero Program” (www.giraffe.org). Aimed at ages 5-20, the primary purpose of the programme is to inspire children and adolescents by providing case study material about ‘real world heroes’ or community action leaders, such as Martin Luther King, Nelson Mandela or Mahatma Gandhi, and rewarding participants who also ‘stick their necks out’ in their own communities. Although there is some link between the principles of EI such as motivation to engage in pro-social behaviour and social awareness (in a community sense, rather than as an inter-personal competency), and the programme may support aspects of SEL based learning through team work and decision making, the actual EI content is extremely sparse and is not acknowledged in the programme materials. Additionally, none of the favourable outcomes associated with teaching EI skills (e.g. better behaviour, higher academic outcomes, lower stress and anxiety) are listed as intended programme outcomes. Similar criticisms can be made of a number of other programmes included in Table 3.2 such as the ‘Aban Aya Youth Project’ (Segawa et al., 2005), ‘Growing Healthy’ (Connell, 1985) and ‘Gemstones’, (www.youngnz.org.nz/gemstones/index.php) which are more appropriately classified as physical health programmes, as any EI content is extremely sparse.

Several programmes demonstrate an over emphasis on inter-personal skills, including the ‘esteem-builders’ programme (Borba et al., 2000) ‘Learning for Life’ (www.learningforlife.org) and ‘Life Skills Training’ (Spoth, Randall, Trudeau, Shin, & Redmond, 2008).

Several of the programmes with a focus on conflict resolution and violence prevention contain an emphasis on only inter-personal skills, such as the ‘Conflict Resolution Curriculum’ (www.sunburst.com), ‘Connecting With Others’ (Richardson, Tolson, Huang, & Lee, 2009) and ‘Peacebuilders’ (Vazsonyi et al., 2004). One particular programme known as, “Caring School Communities”, previously known as the “Child Development Project” (Battistich et al., 2004) is a programme designed to

foster a child's development through the creation of a positive school community by establishing positive teacher-pupil relationships, fostering empathy between pupils and supporting an emphasis of a set of common values and goals (Battistich et al., 2004). The approach taking is classified as multi-component (see Figure 3.2) as the programme contains group, classroom and school based activities. However almost all the materials are based on developing inter-personal competencies such as social skills and empathy (Battistich, Solomon, & Watson, 1998), rather than identifying or regulating one's own emotions.

Caring School Communities is identified by CASEL as providing "*outstanding coverage*" (Collaborative for Academic Social and Emotional Learning, 2003 p.13) of SEL instruction, despite being almost exclusively focused on relationships between others (Zeidner et al., 2002). Aside from the obvious difficulty of attempting to compare the 'apples and oranges' of such diverse programmes, there is the larger issue of the validity of the EI construct itself. If the range of favourable outcomes advertised by Goleman and other supporters of EI (e.g. greater academic attainment, reduction of stress and anxiety, better behaviour) can be achieved without the application of a unified construct, then the design of universal programmes which deliver EI as a comprehensive framework (such as SEAL), appear moot (Zeidner et al., 2002). Moreover, the promotion of SEL as a framework of competencies would also appear to be superfluous and instead the focus should be on the compartmentalisation and identification of which particular domains are responsible for the claims of greater academic success (Aronson, 2002). The same applies to other similar favourable outcomes; especially as such competencies would be more likely to be associated with the particular objectives of the various programmes. For instance, programmes such as Resolving Conflict Creatively, should be classified not as SEL, but as violence prevention programmes and assessed as such, whereas programmes such as 'Facing History' (www.facinghistory.org) or the Giraffes Hero's Programme should occupy the separate category of 'character education' (Elias, 2009).

Closely related to this issue is the third important implication of lack of representation of EI in SEL programmes; the difficulty of conflicting underlying programme theory. As discussed, many programmes that existed before the popular rise of EI have adapted their programme design to include SEL principles. However, the nature of the adaptation has meant that the range of theoretical approaches still exist as underlying the principles of the programme (Bar-On & Parker, 2000; Clouder, 2008)

although most programmes cite social learning theory (Bandura, 1977) or cognitive theories as their theoretical basis (Clouder, 2008). Therefore the nature of adaptation is that EI domains have become part of either the material content or as an additional favourable outcome. Such adaptation is qualitatively different to the design of programmes produced specifically to deliver EI content (such as PATHS or SEAL). The distinction between EI based programmes and other similar interventions is an important one as EI programmes advertise EI domains as the *process* by which favourable outcomes are delivered, whereas other programmes advertise EI domains as additional favourable *outcomes*, rather than part of the delivery of the programme. This difference is highlighted in Figure 3.3.

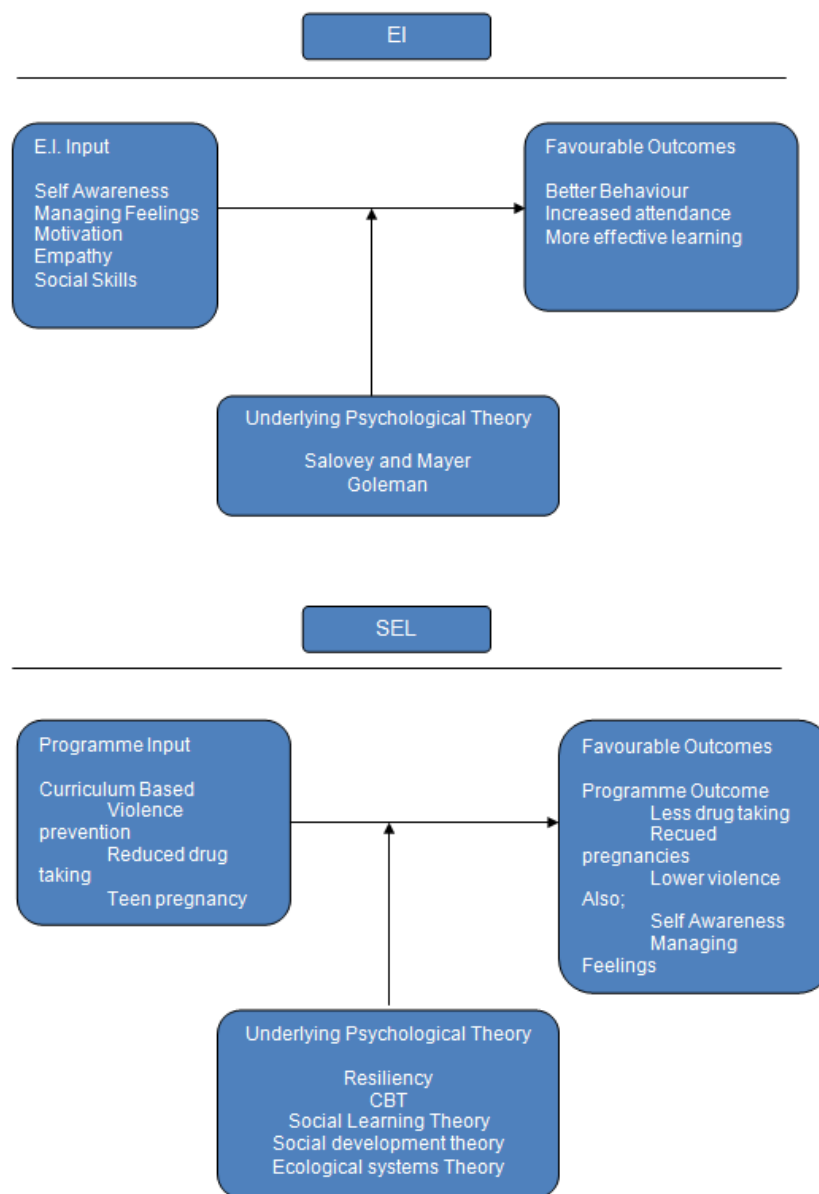


Figure 3.3 SEL and EI as underlying principles for programme

As the literature regarding the theoretical application of EI suggest that it is a process and not an outcome (see section 2), there is an argument that for a selection of SEL programmes the underlying theory is flawed in the delivery of EI skills and outcomes. For the majority of cases the consequence of the flaws may be minor, as, providing appropriate measurement tools are used during assessment (e.g. measuring changes in pupils social and emotional skills, rather than explicit knowledge of the program, although, see section 3.4.4), an accurate evaluation may still take place. However, this is rarely achieved in practice. There are programmes that are based on underlying principles that are incompatible with the theory of EI. One notable example is the 'Efficacy Programme' (The Efficacy Institute, 2009), identified as a SEL based programme in CASEL's programme review (Collaborative for Academic Social and Emotional Learning, 2003). The Efficacy Programme shares similar traits with other SEL programmes as it is an additional curriculum schools may adopt and integrate into their current teaching with the intention of improving school outcomes. Therefore one might argue that the Efficacy Programmes outcomes are more modest than the majority of SEL programmes, as the outcomes are exclusively based on *academic* results (rather than improved social wellbeing for instance). However this highlights the programmes radically different underlying theory. The Efficacy programme is based on the reinterpretation of traditional forms of intelligence (like EI), however, unlike EI, the Efficacy Programme argues that academic intelligence is socially constructed. Therefore school and staff effort should be devoted to creating an environment where pupils become more self-aware of their academic capabilities, rather than their emotional capabilities (Howard, 1992). Given that a programme that rejects the development of emotional competencies in favour of academic skills (contrary to Goleman's assertions) is included in a review of SEL programmes, it is extremely difficult to validate such SEL programmes as a solid evidence base for SEAL. The outcome of this criticism is that there is a far more limited number of programmes with sufficient EI content to provide an adequate comparison to the SEAL programme. However, as will now be discussed; a range of methodological difficulties further limits the suitability of the evidence base.

3.4.4 Rigour of evaluation

Aside from the concept and design issues of the previous section, a difficulty in the evaluation of SEL programmes is the quality of some of the research conducted. A variety of studies used to support SEL are subject to a range of methodological

criticisms which potentially damages the quality of the evidence in support of SEL, however, these criticisms are not always explicitly acknowledged in the literature. This has created a situation whereby 'evidence based' claims and programmes are reliant on inaccurate or misleading results. As SEAL is one example of an evidence based programme, these criticisms must be assessed in order to provide an accurate assessment of current evidence.

Use of unpublished research

One of the major issues in SEL research is the enormous inconsistency in the number and quality of evaluations conducted of SEL programmes, with some programmes receiving numerous, rigorous evaluations (e.g. PATHS) and others having no published studies at all (see Table 3.2). This means there is a disproportionate number of programmes operating in schools with no direct published evidence supporting its curriculum. This is a particular issue given the heterogeneous nature (and therefore limited generalisability) of SEL programmes. As cited previously, SEL programmes are too disparate for one programme to necessarily be used in support of another. Additionally, a variety of programmes typically cite evidence from unpublished studies at school or district level, conference posters, masters level dissertations or unpublished doctoral theses as evidence of programme success (Cecchini, 1997; Durlak et al., in press; Holt, 1993; Stigler, 2003). Whereas these examples may be considered potentially promising in producing evidence of success, this potential is unrealised until passed through a peer review process. Without submission to an academic process of validation, the validity of the research is unsubstantiated and cannot be used as conclusive evidence. For the studies that do appear in peer reviewed journals, there are a number of methodological criticisms of the studies themselves:

Limitations in methodological designs

A number of published studies have presented evidence of significant gains made by pupils participating in a SEL programme, but did not include any control groups in the design of the study (pupils in the same or different schools not receiving the programme) (Clabby & Elias, 1999; Cook et al., 2007; Edwards, Hunt, Meyers, Grogg, & Jarrett, 2005; Lee, Tiley, & White, 2009). For example, in the case of the Norwegian evaluations of 'Second Step' ('*Steg for steg*' in Norway) an age-cohort design was used as an alternative to a more experimental approach as all schools

nationally were required to implement an anti-violence programme, and therefore the use of a control school was impractical. However, results from age cohort designs are difficult to attribute solely to changes as a result of the programme as control samples are not matched in the same time periods, and may be subject to differing effects (Field, 2009). Similar justifications (e.g. the impracticality and expense of more experimental designs) are presented for other studies, however, appropriate modifications have not been made (e.g. age cohort design / repeated measures across years / multiple data collection points), and only simple pre-test post-test evaluations are reported. Pre-test / post-test designs are even more vulnerable to confounding factors and ideally require multiple validations from a variety of time periods of separate studies. However, for the cited examples, such as 'Esteem Builders' (Borba et al., 2000), this is yet to happen.

It is worth noting that the use of a control element is no guarantee of a rigorous design given the risk of incorrectly observing an effect due to a lack of independent observations (Baldwin, Murray, & Shadish, 2005). Although a comparison design assumes a dichotomous relationship between 'treatment' and 'control', in reality there is likely large variations such as the teachers style in delivery material (e.g. control teachers may also routinely demonstrate the same behaviours of the intervention group) (Kerr, Kent, & Lam, 1985). Therefore there is, in effect, no element of control. A further difficulty with this approach is that there is no valid approach for using such data to support programme implementation in other schools. This issue is closely tied to the quality of the implementation, which is discussed further in section 3.5.

A closely related issue is the use of targeted interventions to make claims for whole school results (Durlak & Weissberg, 2007) Although later papers acknowledge this error (Durlak et al., in press) and analyse these two different types of intervention separately, issues still remain. For instance, after-school activities, (in which pupils are much more likely to self-refer, be separate from the school environment, and receive a far different experience (e.g. more informal relations with teacher) than any full school, curricula based programme), are still used to support SEL learning during schools hours (such as the examples cited by the CASEL organisation, www.CASEL.org).

Another extremely important issue is the validity of the outcome measures used. Prior studies have rated success criteria based on levels of teacher satisfaction (Borba et al., 2000; Shriver et al., 1999) which, given the discrepancy between teacher comments and measured impact in other studies (Humphrey et al., 2008),

suggests very little about the quality of success of the programme in regards to changes in pupils behaviours or skills. One extreme example is Borba (2000) who uses binary responses of teachers' impressions, which provides no indication as to the nature, extent or objective impact of the programme. Several studies claim programme success based on a measured an increase in explicit knowledge of the programme rather than development of skills (Connell, 1985; Darnell & Emshoff, 2008). This is a particular problem given the nature of these programmes is an explicit curriculum, and therefore such an analysis is only useful identifying familiarity with the material presented, rather than any change in attitude, behaviour or competency.

For studies that do employ tools to measure objective criteria, a recent meta review (Durlak et al., in press) identified that up to 50% of published studies evaluating various SEL programmes have been conducted using non-valid or unreliable outcome measures. If these findings are considered representative of the majority of SEL assessments (as the cited meta-review contains 208 studies, both published and unpublished, this is not an unreasonable assumption) then there is a serious issue with the extent to which reported outcomes can be considered robust.

Reporting of results

Finally, it can be argued that there is a positive bias of the reporting of results from SEL evaluations (although not always be the studies authors) that artificially inflates the expected effects of these programmes. There is several ways that this is done. For instance, many studies listed are as SEL, despite having never measured EI or SEL domains as part of the programme outcomes (see section 3.4.3). Also, although some programmes show a sustained effect beyond the duration of the intervention (Spoth et al., 2008), such claims are typically limited to a reduction in risk taking behaviours such as substance abuse. Claims for a sustained effect in improved social or EI skills are far less documented. However, this does not prevent some assessments making claims beyond the beyond the length of the evaluation. For instance, in a study by Aber et al. (1998) recommendations are made on how to sustain the 'Resolving Conflicts Creatively' programme in the long term on the basis of a research project lasting only one academic year.

Also, studies report programme success on the basis of incidental, unexpected or irrelevant changes, even if there were no significant main effects (Grossman, Neckerman, Koepsell et al., 1997). In one extreme example, evaluation of the

violence prevention programme 'Second Step' saw a significant increase in angry and aggressive behaviour over the duration of the intervention. However, the abstract only refers to an increase in coping behaviours. (Cook et al., 2007).

Measure of magnitude of effect, or standardised effect sizes are not always reported in SEL studies. This is a particular issue as without a measure of effect size, there is no indication as to the magnitude of any significant effect (Field, 2009). This means that for programmes that report a significant result, it may only represent very minor changes in a pupil's behaviour. In a recent meta-review in which general effect sizes were calculated, it was suggested that for changes in EI skills, there were medium gains made, but for the associated favourable outcomes, such as academic performance, conduct problems or social behaviours, the effect size was marginal (Durlak et al., in press).

In conclusion, despite a large number of programmes, and a corresponding volume of literature, the incorrectly assumed level of homogeneity amongst SEL programmes and the generally inconsistent quality of the research used to support these programmes suggests that claims of an overwhelming evidence base (Weare & Gray, 2003) is at best inflated and at worst simply unsupported. Despite these criticisms there are elements of success in SEL programmes, and therefore the difficulty is in identifying a core of high quality research to accurately assess the true value of SEL programmes. In light of the above criticisms, it is possible to form a series suggested criteria which studies must pass in order to be considered valid. The suggested process is displayed in figure 3.4.

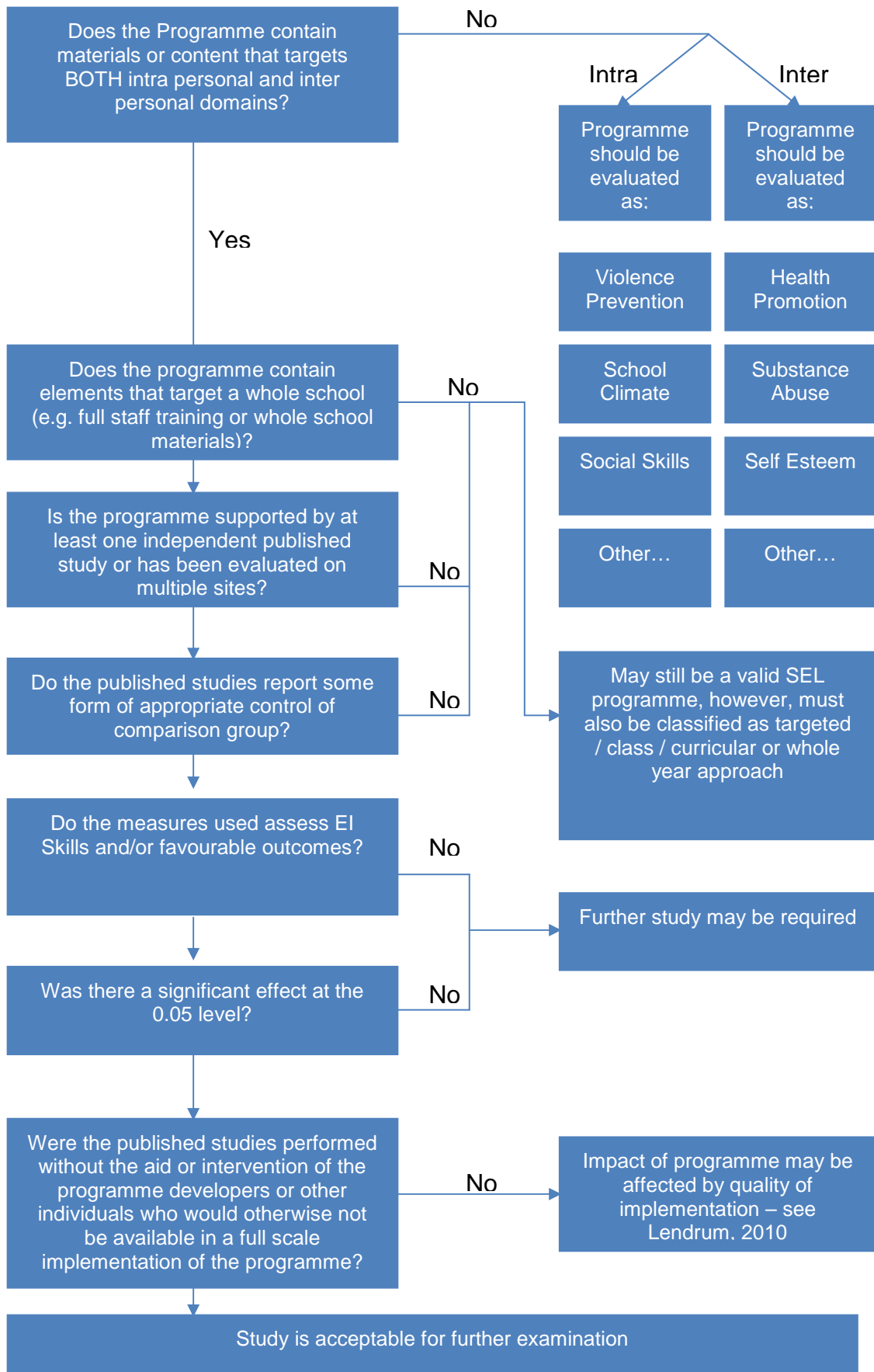


Figure 3.4 Flowchart for assessing SEL programme evaluations

Quality of implementation

So far, the review of the literature has covered three of the four necessary conditions for a programme to be considered potentially successful, specifically;

- Concept (Underlying theory)
- Design
- Rigour of assessment

However, as cited by Weissberg et al (1989) there is an additional element, 'quality of implementation' that is still an essential pre-requisite for programme impact.

Quality of implementation is a vital element of any programme. In order to truly assess whether a programme 'works' (i.e. it's impact), an assessment of only the programmes inputs and outcomes is insufficient (Mclaughlin, 1987). Some measure of the circumstances, environment and context in which a programme operates, and the extent to which the programme is faithfully implemented is required. Failure to attend to the inner-workings of the 'black box' of process and implementation (Harachi et al., 1999) would make it impossible to distinguish the cause of the 'failure' or lack of impact (Raudenbush, 2008). It is important to identify the nature of programme failure as dependent on the nature of the difficulty, different steps are required. For instance, variation in impact or null findings is as a result of the programme design itself (e.g. materials) requires amendment or redesign before further dissemination. Alternatively, difficulty as a result of issues with a particular school or context requires further investigation of the school environment or factors instead. Incorrectly identifying the source of any variation or null effect (e.g. assuming the programme design was at fault, and redesigning the programme) would be costly, time consuming, and ultimately lead to further false premises on which future research is based.

Identifying possible issues with implementation is especially important as there is always a high degree of variation in program implementation, (Durlak, 1995). Schools will never achieve 100% fidelity to the intended implementation as recommended by the various programmes, instead adapting and changing material to suit particular school contents and environments. Historically, schools have a poor record of faithful implementation (Durlak, 1995) and therefore there is likely to be high degree of variation in impact across schools. Many examples of intervention studies have reported no effects when, in fact, the failure was as a result of

implementation rather than shortcomings in the intervention itself (Dobson & Cook, 1980).

One of the more important aspects of the multiple evaluations of PATHS is the importance placed on the quality of the implementation (Kam et al., 2003), and several important factors in achieving favourable results have been noted. For instance, Greenberg et al, (1995) cite the importance teachers interaction and commitment to the programme and Kam et al (2003) identify a link between support from principal leadership and change in pupil behaviours. These findings are consistent with factors identified by studies into the importance of implementation, for instance in a recent meta review, Durlak and DuPre (2008), identified at least 23 different contextual factors that influence implementation. Various authors present different ways of organising these factors, and one of the arguably more comprehensive is that presented by Greenberg et al (2005), which is presented in Figure 3.5

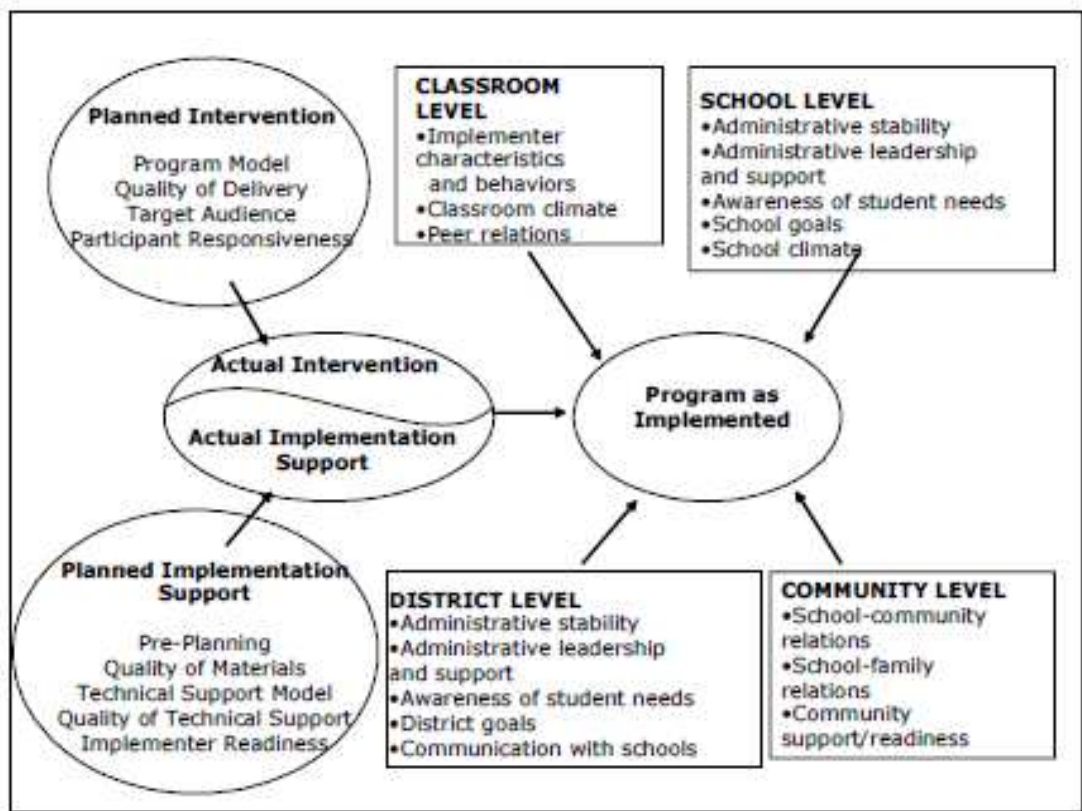


Figure 3.5 Factors affecting implementation (Greenberg et al, 2005)

Despite the importance of identifying issues of implementation when establishing SEL programmes, and additional complication is the failure of certain studies to establish the impact of a particular programme without support and resources from

the programme developers. Such interventions, known as 'efficacy trials' are characterised by the programme being implemented under 'ideal' conditions, typically consisting of additional support and training for school staff during the time span of the intervention. Thus, determining effectiveness rather than simply efficacy of interventions has become a key challenge for researchers (Campbell *et al*, 2000).

Although such programmes may be useful for programme developers to differentiate difficulties with the essential prerequisites for programme impact (theory, design, assessment and implementation), such studies cannot be used as evidence of a successful SEL programme. This is because:

"[Efficacy] trials of programmes deliver resources at a level that could not be sustained under normal circumstances, and so a significant challenge in the years ahead is the movement... [to] where the implementation of programmes in real life circumstances is undertaken" (Shucksmith, Summerbell, Jones, & Whittaker, 2007, p.45).

Also, previous studies that have appeared promising under ideal 'efficacy' conditions have shown considerable variability when implemented as 'effectiveness trials' e.g. real world conditions with no additional support (Goodstadt, 1988). This is because a range of barriers exist which influence 'real world conditions' outside of efficacy trials, including informational, technological, and physical resources (Greenberg *et al*, 2005; Raudenbush, Martinez, & Spybrook, 2007). Additionally, Elias *et al* (2003) state that: *"the effective use of economic and social capital often underlies the ultimate success of real change"* (p.312).

Thus, determining effectiveness rather than efficacy of interventions has become a key challenge for researchers (Campbell *et al*, 2000). In light of these concerns any future research design would ideally include some component assessing the possible role of the aforementioned constraints or barriers. One difference between UK and US research has typically been the emphasis on discussing implementation rather than impact, however, as will be discussed, this does not necessarily mean more effective research. Therefore, the differences between US and UK research are now discussed.

3.5 Concept, design and implementation of SEL programmes in the UK

As discussed at the beginning of the first chapter, there is a common interest within the English education system that social and emotional competencies should become part of the school experience, and Governmental policy has been promoted through school in order to support this (Department for Education and Skills, 2003, 2006a; Margo et al., 2006). Despite the acceptance of the potential benefit of such skills, there remains a debate as to what such an approach should look like. This is evidenced by different authors using a variety of different terms as well as a variety of reviews and assessments measuring a range of different concepts such as 'mental health' (Wells, 2003) 'well-being' (Department for Education and Skills, 2004) and 'emotional literacy' (Weare, 2004).

Despite this difficulty being central to implementing such initiatives within the UK education system, (aside from small pockets of research emerging within the UK), the vast majority of systematic reviews and evidence from individual programmes and initiatives are produced in North America (Coleman, 2009), with the UK contributing an extremely small amount of 'native' research. Therefore the UK is heavily reliant on American literature in establishing a favourable model of social and emotional wellbeing. Aside from a few notable examples (Humphrey et al., 2008), the few studies that have been conducted within UK schools have been generally suffered from the range of methodological criticisms directed at the counterparts of American research. For instance, in examining the impact of the PATHS curriculum in UK primary schools, there has been no measure of effect size (Curtis & Norgate, 2007). In one particular study by Kelly et al (2004), the study was limited to only one school, and therefore represented a very small sample of pupils, with no control groups. In another example, an examination of the Place2Be programme (a UK based intervention designed to promote emotional wellbeing) also neglected to include a control group or control for demographic variables (Lee et al., 2009). Such limitations appear particularly disconcerting as they imply a lack of development in the methodology of assessing SEL programmes. However, a more forgiving interpretation of the methodological limitations in UK based studies is a difference in approach between UK and US forms of assessment in general (Weare, 2010b). This is because there appears to be more focus on the process of implementation and individual's impressions of impact, rather than on the basis of objective or empirical outcome measures (Coleman, 2009). These different approaches in evaluation reflect an underlying difference in policy and opinion in the UK as to how to teach

social and emotional learning. This is because the programmes that originate from the UK (rather than US programmes such as PATHS being used in UK schools – Kelly (2004) typically contain far less curriculum material in favour of a more integrated and implicit method of implementation (therefore requiring a greater level of assessment of fidelity and variation). UK evaluations have reflected this difference in approach, and have tended to assess perceptions, opinions and processes rather than pupil or school level outcomes. For instance measures or questions regarding perception of impact have been included in several UK studies (Hallam, Rhamie, & Shaw, 2006; Kelly et al., 2004; Lee, 2006; Ofsted, 2007). One way in which UK based methodologies could be adapted as a result of US literature, is an increase in the rigour and quality of design, including the inclusion of control groups, longitudinal assessment and the use of hierarchical techniques to differentiate between pupil and school level variance (Beets, Flay, Vuchinich et al., 2009; Snyder et al., In Press). This comment is especially true in relation to the evaluations of the pilot studies of the SEAL programme, known as the ‘Social and Emotional Behaviour Skills Programme’ (SEBS), conducted by OFSTED (2007) and another by NFER (Smith et al., 2007) (discussed in the next subsection).

Another example in difference between US and UK culture is the publication of current opinion papers criticising the UK’s inclusion of social and emotional skills within the education system. For instance, in a report published coinciding with the launch of the trials of the Secondary SEAL programme, Carol Craig describes the systematic approach of teaching social emotional skills as a, “*difficult...[and] dangerous route*” (Craig, 2007, p.13). Many of Craig’s criticisms of social and emotional learning are mirrored in the preceding chapters of this review (for instance, lack of an accepted psychological theory, huge variation in programmes, and poor quality in previous research); however, some of the more unique points in Craig’s critique lack supporting evidence. For instance, Craig cites the potential for “*ironic effects*” (Craig, 2007, p.8) in teaching EI skills, which suggest deliberately attempting to practise social or emotional skills, such as calming techniques, may actually cause anxiety instead (Najmi, Wegner, & Nock, 2007). Although there is some limited evidence of a reversal in social skills during a violence prevention intervention (Grossman et al., 1997), such effects in regards to the measurement of EI skills and outcomes directly have yet to be identified.

Another of Craig’s central criticisms of the SEAL programme is the “*target-driven, management-by-objectives approach*” (Craig, 2007, p.2) as it ‘risks’ the use of assessment and learning outcomes of emotionally centred goals. Whereas there is

evidence that a deficits model approach may be counter-productive (Seligman, Ernst, Gilham, Reivich, & Linkins, 2009), the rejection of the use of explicit targets in teaching EI based skills and behaviours would mean also the rejection of some of the more thoroughly evaluated aspects SEL programmes. Therefore, it might be suggested that such criticisms do not necessarily relate to the current consensus about the implementation of UK based SEL programmes.

Arguments from other quarters have criticised the potential change in educational ethos posed by whole school approaches such as SEAL. For instance, Ecclestone and Hayes (2008) argue there is little benefit to be gained in devoting considerable time and resources in radically changing the ethos of the education system as the favourable outcomes of such an approach have been unrealistically inflated. Therefore, the potential negative effects such as lower emotional resiliency, assumption of an emotional deficit and potential for ideological manipulation in masking greater issues, are ignored (Ecclestone & Hayes, 2008). Such views are also present in the US literature, as Hargreaves states, "*there ought to be a critical consciousness of how emotion can also become a romanticised distraction from pressing education problems*" (Hargreaves, 2000, p.813). Such criticisms are particularly relevant to whole school approaches such as SEAL which attempt to alter the ethos and climate of the school. Such criticisms are hard to quantify in relation the present evidence. Although it is accepted some of the more universal and grandiose benefits of SEL programmes are unsubstantiated, there is little evidence suggesting a large scale detrimental effect of implementing these programmes. In regards to potential detrimental effects on pupils, one option for future research would be the inclusion of a measure of mental health, indicating whether any change outcomes correspond to adverse changes in emotional symptoms, contrary to expected evidence. Another alternative is the design of studies that include a long term 'follow up' or longitudinal component to investigate any persistent secondary outcomes.

In summary of the cultural differences in approaches to SEL between the US and the UK, although there is a broad overlap in many of the issues (unsurprising, as they share the same evidence base) there are two key points that highlight distinct differences.

First, SEL programmes produced in the UK focus much more on underlying practice and ethos in their design, consequently, UK based evaluations are focused on the process of implementation and the perceptions of impact rather than on of the

measure of objective outcome criteria. Although this has the advantage of a more accurate assessment into the variations in implementation, it is as the cost of providing adequate outcome measures. Second, the UK education system is far more of a unitary institution than the US equivalent. National decisions, such as the promotion of the SEAL programme affect almost every school in the country and therefore have a greater effect on national policy, opinion and direction compared to US initiatives enacted at state or local level, meaning any study into UK based programmes to be larger scale and ideally include some form of representative sample.

These differences raise two important questions;

- Given the difference in approach between UK and US programmes, is it appropriate to assess the effectiveness of largely curricula based programmes in determining whether a UK approach would be equally effective?
- Is it appropriate to use the same methodologies to assess a qualitatively different programme?

In regards to the first question, there is some suggestion by UK academics and authors that it is difficult to 'quantify' the application of SEL skills (Park, 1999; Weare, 2004), especially as the intention of SEAL is to alter the underlying foundations of a school's climate or philosophy and such concepts are apparently immune to objective measurement. Whereas this may be the case, this should not exclude the measurement of favourable pupil outcomes as a result of these changes. This is especially true as such change is noted in the SEAL guidance material, which claims pupils' social and emotional competencies should increase as a result of the implementation (see section 3.5). In relation to the second question, there is a strong suggestion that the UK does require its own evidence base as the cultural and educational climate are sufficiently unique that US orientated materials might be less effective or appropriate in UK classrooms. Such differentiation is especially important when comparing UK designed programmes such as SEAL where the approach taken in the delivery of the programme is qualitatively different from US approaches. Therefore the UK is overdue in building its own evidence base. Some progress towards rectifying this limitation has been seen in recent years, and in order to effectively assess the likely impact of the SEAL programme, these programmes are now examined.

3.5.1 UK evaluations of SEAL programmes

As shown in Figure 1.1, the launch of the Secondary SEAL programme is based on recent, similar interventions that have been piloted and evaluated within the English education system and provide the closest match in terms of programme material and goals, as well as operating in the ethos and climate of UK schools. To date there have been five evaluation studies of different versions of the SEAL programme. This includes three studies of primary SEAL, specifically an examination of the primary SEAL curriculum component (Hallam et al., 2006), a study of the small group work component (Humphrey et al., 2008) and a recent evaluation of the family SEAL element (Downey & Williams, 2010). Two studies have been conducted with the pilot materials used to construct the Secondary SEAL programme, known as the Social and Emotional Behavioural programme (SEBS). SEBS was changed to SEAL prior to the national launch in order to promote its continuity with the primary SEAL materials. A list of the evaluations is shown below.

Primary SEAL

- Hallam, Ramie, & Shaw (2006) (Curriculum component)
- Humphrey et al (2008) (small group work)
- Downey & Williams (2010)

Secondary (SEBS)

- Smith, O'Donnell, Easton & Rudd (2007)
- OFSTED (2007)

Primary SEAL

All three of the studies into primary SEAL reported some form of positive impact. For instance, Hallam, Ramie, & Shaw (2006) stated that SEAL: *“had a major impact on children’s well-being, confidence, social and communication skills, relationships, including bullying, playtime behaviour, pro-social behaviour and attitudes towards schools”* (Hallam et al., 2006 p.1). Similarly Humphrey et al (2008) reported some positive changes as a result of children attempting small group work sessions. Downey & Williams (2010) also cite increases in children’s emotional literacy over the course of the implementation. Although such findings appear to support the current

process and design of SEAL (at least at the Primary level), there are a number of limitations in interpretation of the results.

In all three studies, for the positive results reported, the overall effect size was very low, especially in relation to pupil skills, with some positive changes reported in both the study by Hallam et al (2006) and Humphrey et al (2008) representing less than 1 point change using the SDQ. Additionally, there is evidence that positive results were not consistency replicated across all aspects of the intervention with several examples of null findings, and Humphrey et al (2008) reported consistently null findings in relation to parental reports. Furthermore, the evaluation by Hallam et al also highlighted some potentially negative consequences as a result of the intervention, including a decline in academic performance for children in Key Stage 1 and negative changes in attitudes towards school and relationships with teachers among children in Key Stage 2. However, there is not enough detail as to why this effect may have occurred to support the aforementioned ironic effects theorised by Ecclestone and Hayes (2008). Finally, for the studies by Hallam et al and Downey & Williams there are limitations in the rigour of the designs, as both studies do not include comparison groups, and additionally, the Family SEAL represents a very small sample size (as it was a local, rather than national evaluation).

Although the cited studies imply that there is some evidence of small, potentially significant effects as a result of the SEAL programme in primary schools, major changes appear unsupported. Instead, it appears that claims for large changes in pupil's skills and behaviours are based on perceived impressions of impact, consistent with the current preference for this approach to evaluation in UK SEL research. A comparative analysis of objective outcome measures suggests a much more reserved outcome as a result of the SEAL programme.

Secondary SEAL

In relation the secondary SEAL (SEBS) pilot, both studies indicated positive reactions from staff involved in the project, however the two studies differed in relation to pupil effects. The Smith et al (2007) study indicated that schools felt the pilot had impacted positively on pupil behaviour and emotional wellbeing, in addition to teaching and learning. Conversely, OFSTED (2007) reported that, "*the programme had not had a significant effect on pupils' social, emotional and behavioural skills*" (p.15). In regards to the study conducted by OFSTED (2007), information was gathered from 11 schools trialling the SEBS programme. The study identified key

characteristics in regards to the feasibility of implementing the programme, specifically the need of principal leadership, the importance of a strong and clearly articulated ethos at the school level, and the need to manage staff resistance and training. A similar approach was adopted for the study by Smith et al (2007), who also identified the importance of leadership, as well as the need for support from the Local Authority. An important factor also identified by both studies was the variation in approaches when implementing the programme, with varying degrees of 'stealth' (e.g. providing materials to staff without referring to the programme specifically), amount of staff training provided and a range of methods used to evaluate the extent of implementation. Although both evaluations indicate the influence of various factors in the implementation of SEAL (the importance of which is noted in section 3.5), neither programme was able to assess any form of objective impact. Both evaluations question various personnel as to their perceived impact of the programme. However, as noted previously in section 3.4.4, this is not a robust (e.g. involving some element of comparison and/or using established outcome measures at baseline and post-test) measure of change in pupil skills. One reason for this omission may be that schools also reported difficulty in how to analyse pupils specific social, emotional and behavioural skills, either in order to establish a baseline, assess individual needs or monitor change. Without such measures it is extremely difficult to assess whether pupils actually benefitted from the interventions in the ways suggested in the programme materials (e.g. rise in the ability to manage feelings, higher motivation and social skills, to empathise).

3.6 Chapter summary

The current chapter has presented a critical analysis of the current evidence used to support the secondary SEAL programme.

To begin, the chapter outlined the link between the theoretical concept of EI and its practical application within social and emotional learning (SEL) programmes. This is particularly important as one aspect of the current study was highlighting the difficulty in establishing a clear definition what SEL entails, and subsequently how to attribute favourable outcomes to such a widely defined field.

After establishing the link between EI and SEL, the chapter continued by discussing the larger amount of variation between SEL programmes used to support the

evidence for the SEAL programme. First, the variety in programme goals were examined and compared to the SEAL programme. Table 3.2 indicated that many programmes have distinctly different goals to the SEAL programme, but are still used as evidence of for SEL learning.

Second, a similar argument was made in regards to the nature of the intervention- e.g. the way the programme is delivered to pupils. Evidence suggested that given such diversity, it was inaccurate to consider the results from one type of intervention as support for another (e.g. targeted, curriculum based programmes do not necessarily indicate the potential successful for whole school, ethos orientated programme such as SEAL).

Third, level of EI content across various SEL programmes was analysed, and it is suggested that for many programmes used to support EI and its basis for the SEAL programme, EI content was present only in very small amounts, limiting its validity as prior evidence for the success of the SEAL programme.

Fourth, the rigours to which prior evaluations have been subject to were analysed. A range of methodological inconsistencies in approaches were highlighted. Important factors noted in prior research included the extent to which proximal skills and behaviours (e.g. directly related) outcomes have been previously evaluated.

Finally, the most direct evidence for the Secondary SEAL programme was assessed by examining UK based research which included prior evaluations of the SEAL materials. Marginal gains in the primary version of SEAL suggested the potential for affecting pupil outcomes; however criticism of the secondary studies included lack of objective measures of pupil skills. In summary of the chapter, although there is evidence of positive pupil outcomes in relation to SEL programmes, the diversity in programmes and evaluation, means that it is difficult to apply success criteria to any one particular intervention. Therefore, there is lack of direct evidence supporting the proposed favourable pupil outcomes as a result of the current Secondary SEAL programme.

3.7 Rationale

In summary of the above literature, and in reference to the essential prerequisites for programme impact (Weissberg et al., 1989) (see Table 1.3), there are several questions remaining as to the potential success of the SEAL programme. The introduction of the Secondary SEAL programme into English secondary schools is embedded in a context of contentious debate surrounding the conceptual validity of the underlying framework, contested claims as to the suitability design and process in how SEAL is to be implemented, and uncertainty as to the applicability, validity and rigour of the results of prior evaluations.

Conceptually, there remains a strong debate as to the validity of the underlying construct of EI. Cognitive models suggest a far more limited outcome of developing EI skills than programmes suggest, and although Goleman suggests EI is a valid framework for the promotion of such skills, the mixed model of EI is still far from being considered a valid construct. Additionally, measurement tools are arguably still being validated, making the measures of such a construct particularly difficult. Therefore, for any intervention based on Goleman's model of EI (such as the SEAL programme), some form of assessment as to the validity of the underlying relationship between EI and favourable outcomes (such as mental health and positive behaviour) is required.

In regards to the UK context, the evidence base is currently dwarfed by the mass of US literature, although there is evidence of its growth. Current examples of UK based literature are generally limited in scope (Curtis & Norgate, 2007; Downey & Williams, 2010; Kelly et al., 2004), or suffer from a lack of rigorous or objective outcome measures (Ofsted, 2007; Smith et al., 2007) which arguably prolongs some of the current debate as to the potential success for social and emotional learning within the UK education system.

Research is therefore required that provides a more rigorous approach to assess the quantitative impact of SEL programmes on the skills and competencies of pupils, preferably utilising large scale samples in order to provide nationally representative results.

Additionally, it should be noted that quality of implementation is also a factor in establishing the variance in impact, and as noted by Weissberg (1989), it would be

remiss for any evaluation to not include some form of comment upon the nature of the programmes execution in school.

Although having highlighted the importance of implementation, this thesis is limited to suggesting only whether this is a factor, and will not look past any main themes that emerge. This is due to time and resource constraints, which are discussed further in chapter 4. For a further investigation into the importance of implementation both in general and in the context of SEAL, see Lendrum (2010).

Therefore the current study intends to advance knowledge within the domain of social and emotional learning in several key areas:

- Provide a nationally representative analysis of any change in secondary school pupil's self-rated emotional literacy as a result of the SEAL programme (which was not accomplished in either the study by OFSTED or NfER).
- Provide a similar analysis of potential changes in pupil's mental health and pro social behaviour, indicating whether changes in emotional literacy also mean positive changes in favourable outcomes.
- Investigate the role of various socio-demographic factors to be able to more accurately establish the incremental validity of the EI construct compared to previous studies.
- Establish the use of multi-level modelling as an appropriate tool for large scale, multi-site evaluations, thereby increasing the expected rigour of future evaluations
- Assess the underlying relationship between the variables or emotional literacy, mental health and pro social behaviour in an attempt to ascertain whether positive changes can theoretically occur as a result of intervention. Although there have been some studies in relation to adult populations (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007), this is yet to occur within the current age range of the study.

3.8 Research questions

1. What is the impact of the secondary SEAL programme on pupils' *emotional literacy*?
 - a. Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?
2. What is the impact of the secondary SEAL programme on pupils' *mental health difficulties*?
 - a. Are there any identifiable socio-demographic factors at school or pupil level associated with these behaviours?
3. What is the impact of the secondary SEAL programme on pupils' *pro social behaviours*?
 - a. Are there any identifiable socio-demographic factors at school or pupil level associated with these difficulties?
4. What is the evidence for an underlying relationship between:
 - a. Emotional literacy and mental health difficulties?
 - b. Emotional literacy and pro social behaviour?
5. What are the qualitative indicators of impact?
 - a. Do these indicators support or contrast the quantitative findings?

4

4 Methodology

4.1 Introduction to chapter

The aim of the current chapter is to describe, scrutinise and justify the methodology of the current study in relation to the research questions presented in chapter 3.

In order to effectively contribute to existing knowledge in this area, the current study has been designed to assess the impact of the SEAL programme by addressing some of the methodological criticisms that hinder previous designs. To that end, various aspects of the study are discussed to elucidate how this was achieved. In order to facilitate this, the chapter is split into five sections.

The first section discusses the relevance of adopting an epistemology, and its impact upon the methodology and individual methods used in the current study. The selection of a pragmatic methodology is particularly relevant as this allowed for the use of a mixed methods design within the current study. Both quantitative and qualitative methods were used in order to avoid forming a 'black box' (Harachi et al., 1999) assessment (in which no indication of the wider context or process of an implementation is given) which is a criticism of prior evaluations.

Second, the particulars of design of the study are presented, with particular regard to the possible implications the current design may have on the reliability and validity of the data. For instance, issues dealing with the legitimisation of mixed method designs, the non-random selection of schools, and the extent to which matched comparison schools represented an appropriate control are discussed.

Third, various details regarding the participants of the study are discussed. This includes the initial selection of SEAL schools, the process by which matched comparison schools were selected, and details regarding the optimal and final

number of participants. An indication of the appropriate sample size needed for the analysis is also included.

Fourth, details of the data collection methods are explored, with particular reference to psychometric properties of the tools, the relevance of the various socio-demographic factors, and details as to the how the data was collected, validated and analysed (both quantitative and qualitative).

The chapter ends with a description of the ethical considerations necessary to conduct the study.

4.2 The importance of epistemology

It should be clear from the preceding literature review that issues of contention within the arena of social and emotional learning stretch from comparatively minor differences in what material to deliver for a most effective outcome (Topping et al., 2000) to major theoretical divisions regarding the very essence of how information and knowledge can be acquired and learnt (section 2.5.1). A main point of the literature review is that the ‘theory of knowledge’ of a child’s development, has a major impact on an individual’s assertion as to just how successful SEL programs can be delivered (section 2.5). In the same way, the inherent assumption as to how knowledge is acquired on global level impacts upon how the current research is conducted and ultimately dictates what methods of enquiry are used as well as the subsequent conclusions on data gathered. Therefore, there is a need to critically reflect and explicitly state any inherent assumptions within a particular design, especially the assumptions made in regards to the acquisition of knowledge.

The discussion of epistemology and its influence is a much cited issue in many disciplines (Willig, 2006), and this had led to a multitude of competing frameworks and conceptualisations. In order to clearly establish what is meant by the term epistemology and how it impacts upon the research, the framework proposed by Morgan (2007) is used. In his paper, Morgan refers to epistemology or ‘world-views’ as:

“Distinctive belief systems that influence how research questions are asked and answered and takes a narrower approach by concentrating on one’s worldviews about issues within the philosophy of knowledge” (Morgan, 2007 p.52)

In line with previous work in the social sciences, Morgan uses the term *paradigm* (Kuhn, 1970) to describe a particular world view, the importance of which is stated by Guba & Lincoln (1994):

“Paradigm issues are crucial; no inquirer, we maintain, ought to go about the business of inquiry without being clear about just what paradigm informs and guides his or her approach” (Guba & Lincoln, 1994 p. 116)

Guba and Lincoln’s statement reflects their assertion that different paradigmatic stances influence how researchers conduct and report their inquiries. Traditionally, different paradigms support (and reject) certain methodologies. For instance, constructivism and post structuralism are strongly associated with qualitative research, whereas post positivism is more often associated with quantitative methods of inquiry. Historically, what has differed has been the dominance of a collection of methodological approaches within similar paradigms and refinements of the ideals within the particulars of the prevailing ‘world view’, rather than an attempt to integrate approaches or operate across paradigms (Johnson & Onwuegbuzie, 2004).

This traditional approach can be considered hierarchical (world view informing methodology informing methods), and therefore there is an obvious restriction in the type of analysis that can be performed on data within particular paradigms. As methodologies are traditionally informed by the underlying epistemologies, it may be difficult to adopt a quantitative methodology and employ statistical analysis without first paying due regard to the assumptions inherent in a post positivist paradigm, or conversely make interpretation of qualitative data without first referring to poststructuralist ideals. For example, use of statistical data across a large sample is (in all likelihood) acknowledging a single, definable reality in line with positivist teachings. Equally, the use of a single case study utilising open ended interviews will most likely be influenced by a phenomenological approach, and this will most likely impact upon subsequent data analysis when considering issues such as transferability or generalisability, reliability or trustworthiness (Creswell, 1998; Miles & Huberman, 1994). To summarise, epistemological assumptions are present within research and by acknowledging their influence, a researcher restricts their available methods and forms of analysis accordingly, limiting what can be said about the data.

Conversely, a researcher could employ any methodology with no appreciation for its philosophical routes by failing to attend to the underlying philosophical assumptions of a research design. Such a study would appear similar to more theoretically grounded work. However it would be subject to several limitations in the

interpretation of its findings. It can be argued that such an approach would invariably lead to an ignorance of the implicit assumptions contained with the various method, and this would most likely result in insufficiently reflective practice and result in a reduction in an ability to be generative and insightful in both method and analysis (Tashakkori & Teddlie, 2003).

In summary, the inclusion of a theoretical framework offers several benefits to research. First, it acts as a guide to the direction and nature of the research question. Second, it is useful to identify the implicit assumptions a researcher may have as to the nature of the enquiry. Third, it provides some idea about how implicit assumptions are likely to shape data collection and analysis. Without this overall guide there is a danger of producing research that is not sufficiently reflective or insightful to provide accurate and satisfactory conclusions.

Historically, the nature of the argument as to the most appropriate or superior paradigm to adopt has been one of ardent debate (Johnson & Onwuegbuzie, 2004). A disturbing feature of the argument has been the avocation of oppositional approaches, with supporters of qualitative or quantitative methodologies arguing the flaws and weakness of opposing methodologies while extolling the virtues of their own paradigms (Gage, 1989), resulting in two distinct camps, with little room for middle ground. So opposed are the purists of alternative paradigms and subsequent methodologies, the only common characteristic they share is the support of the incompatibility thesis (Howe, 1988) which demands that qualitative and quantitative research paradigms, methodologies and methods cannot be and should not be mixed.

Examples in the literature suggest that this debate will rage for as long as there are supporters of particular paradigms (Miles & Huberman, 1994). However, several examples of recent work suggest that paradigms do exist that allows the use of flexible methodologies without serious concerns about validity (Creswell, Plano Clark, Gutmann, & Hanson, 2003; Tashakkori & Teddlie, 2003). It is the stance of this study that both sides of these 'wars' (Gage, 1989) are correct, that both qualitative and quantitative approaches provide insights into data unachievable by its opposite number and that both paradigms also suffer some serious methodological flaws. Instead of entering into the debate of the most appropriate or 'superior' approach for any given research, this study instead takes a 'third way' (Johnson & Onwuegbuzie, 2004) which is the acceptance of a pragmatic framework. Such an approach is concerned with the practical consequences of research rather than its prior

underlying theory or epistemology (save for the theory of pragmatism itself). Consequently the significant issue is not an argument of which method may be superior to another, but rather what method can best answer the research question.

It is not the intention of this study to contribute to the debate over 'appropriate' epistemologies (save for the selection and promotion of a pragmatic framework, see section 4.3) as several good summaries can be found elsewhere (Rowan, 1981; Tashakkori & Teddlie, 2003; Willig, 2006). Therefore the basic tenets and reasons for selecting a particular paradigm, and its influence on the subsequent design, methodology and results will be discussed.

4.3 Theoretical perspective: a pragmatic approach

"To pragmatists, truth is whatever assists us to take action that produces the desired results" (Kvale, 1996 p.248)

This study is constructed upon the principles of pragmatism as a theoretical perspective (Mcdermind, 2006; Misak, 1998; Murphy, 1990).

Although there is a full philosophical system of pragmatism (Dewey, 1948; James, 1907; Peirce, 1878), the details of this approach (of which there are several on-going discussions and debate into its precise nature, *ibid*), is beyond the scope of being applied in a practical manner to research and is best confined to philosophical debate (Cherryholmes, 1992; Garrison, 1994). However, the basic tenets of the approach, which are more or less common across the various permutations of pragmatism, have been accepted as a useable paradigm, particularly within the social sciences (Biesta & Burbules, 2003).

In accepting a pragmatic framework, the *acquisition* of knowledge is more important than the *process* of acquiring knowledge and more important than the methods used or the philosophical worldview that underlies the particular method (Tashakkori & Teddlie, 2003). In practice, this means that decisions made in regards to design, methodology and subsequent selection of methods are practical and contextually responsive, as a result of the demands of how best to answer the research question, rather than being influenced by an overall epistemological framework (Datta, 1997). Therefore the research question 'mediates' the relationship between world view and methods as opposed to being informed by it. The impact adopting a pragmatic epistemology on framework of the study is displayed in Figure 4.1.

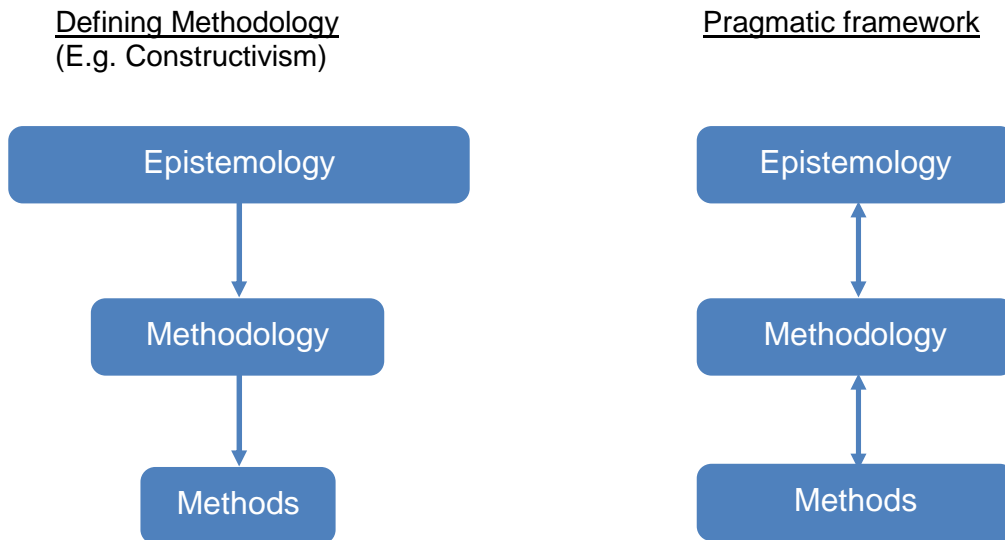


Figure 4.1. The influence of epistemology as the framework of research (Morgan, 2007)

As methodology (as driven by the research question) is of primary importance in a pragmatic design, both quantitative and qualitative methodologies may be employed in a single study, providing either (or both) are the most suitable approach. Therefore the forced dichotomy between frameworks such as post positivism and constructivism are abandoned, as is the philosophical arguments as to what 'truth' and 'reality' may represent in various paradigms in favour of a practical and applied research philosophy.

A criticism of this pragmatic approach is in its inherent flexibility. House & Howe (1999) view the use of value-free practicality as unsatisfactory due its ambiguous nature, suggesting that in the field of evaluation design in particular (of which this particular study is based), studies may be used to serve "*whatever ends clients or policy makers endorse*" (House & Howe, 1999 p.37). Although this is a legitimate claim of researchers, (especially in evaluation designs such as social and emotional learning where vested interests are quite explicit about their desire to see the industry promoted through empirical research) the claim that researchers may wittingly or unwittingly serve 'end users' rather than the research questions is not unique to a pragmatic framework. In fact, pragmatism makes little argument against such values existing; it just simply does not allow them to interfere with the research methodology. This has the advantage of making inherent values explicit, which allows others to judge the relative levels of bias present in a research design. A Pragmatic methodology is a more 'up-front' approach compared to other research

designs where opposing ideals embedded in implicit epistemologies may take place on a more inherent level or lead to an a-paradigmatic design as referred to earlier.

Pragmatism is not the only research philosophy that favours consequence driven research. For instance the transformative –emancipatory approach has been cited as another worldview that rejects methodological purism in favour of practicalities (Merterns, 2003; Tashakkori & Teddlie, 2003). However, such an approach is entirely driven by the needs of such individuals as end users and policy makers, the very individuals that House and Howe’s at which criticisms are aimed. Therefore the criticism that pragmatism runs the risk of being unduly influenced by social arrangements is a matter of ensuring reliable and transparent data, of which the consumer of the research is left to judge for themselves.

In relation to one of the aims of the design, to counter methodological criticisms in previous research, the adoption of a framework is particularly important as prior studies have typically been conducted on an a-pragmatic, experimental approach (Weare & Gray, 2003). The adoption of a pragmatic framework is designed to counter this criticism allowing the inclusion of both qualitative and quantitative data.

4.4 Pragmatic methodology – mixed methods

“[Pragmatism] supports paradigm integration and helps mixed method research to peacefully coexist with the philosophies of quantitative and qualitative research.”
(Johnson, Onwuegbuzie, & Turner, 2007 p.125)

Considering the relatively recent acceptance of mixed methods as a formal alternative to more purist approaches, it is not surprising that issues dealing with the application of both qualitative and quantitative methods within the same design are still very much under review. Although recent years have seen a large increase in the literature available on the subject (Bryman, 2007; Creswell et al., 2003; Tashakkori & Teddlie, 2003), the discussion has been one mainly of conceptualising what studies may look like and developing examples of efficient practise. Issues still at large within this ‘new community’ of authors include difficulties with a consensual definition, the adoption for conventions in combining and synthesising mixed methods materials and issues in ensuring reliable and valid data given the complexities of mixed methods designs.

4.4.1 Issues of definition

In an effort to secure a consensus from some arguably disparate definitions, Johnson, Onwuegbuzie & Turner (2007) attempted to collate commonalities of various definitions to create a singular clarification of what is meant by mixed methods research:

“Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purpose of breadth and depth of understanding and corroboration” (Johnson et al., 2007 p.123)

This definition has the advantage of highlighting the importance of combining different strands of data to achieve a mixed methods design, instead of simply running parallel strands of research, or failing to analyse data in relation to both approaches. This would not be considered mixed methods as it would fail to draw strengths from the ‘synergy’ of oppositional approaches (Creswell et al., 2003). However, beyond this, Johnson et al. (2007) definition shows how broad scope mixed methods is, (mainly as a result of its recent acceptance in the research community) and therefore its consequential lack of parity with more defined approaches of quantitative and qualitative designs.

However, as much as the intricacies of epistemologies ultimately draw the researcher away from the application of actual research, so does any in-depth attempt in establishing a consensus in issues of definition. Therefore it is suffice to say that the current study will utilise both qualitative and quantitative methods where appropriate, and that analysis will ultimately entail an interaction between both approaches.

4.4.2 Validity

In order for research to be accepted within any community (researcher or practitioner) it must be defensible to the consumers of the finished result. Ensuring the process and results of research is justifiable is a cardinal issue for any research for obvious reasons, however, it is particularly difficult for mixed methods research. This is because the combining of methods is particularly complex, not just because of the difficulty of integrating complementary strengths and non-overlapping weaknesses (Onwuegbuzie & Johnson, 2006) but also due to the very different processes, judgements and terminology as to what is considered to be ‘valid’ using

different methodologies. Given such vastly different approaches and theories in regards to validity in qualitative and quantitative research, it is impossible to judge the relative success of particular research without some form of common terminological ground. Even the term 'validity' is rejected by some qualitative researchers as it is associated with values of a common reality (contrary to their own epistemological frameworks). However, this is a result of conflicting ideas in regards to what is 'truth' and 'reality', which has already been rejected in favour of a more applied approach (see section 4.3). In principle, the issue of validity is an attempt to produce 'quality' research, regardless of methodological orientation; in this regard, the following questions are produced:

- What do we know as true? (Reliable?)
- How do we know we are asking the right thing? (Valid?)
- How much of what we know apply to others?
- How do we know we know everything?

In an effort to bring together the little research there has been into the quality criteria of mixed methods research, Onwuegbuzie and Johnson (2006) propose a series of 'legitimation types' to guide researchers and ensure quality mixed methods research. New terminology is created to distance mixed methods from the inductive / deductive dichotomy of previous designs and instead the term 'inference quality' is used to denote both quality of design and interpretive rigour. One example of a legitimation type is "*sample integration*" which deals with the extent to which meta-inferences can be drawn from either qualitative or quantitative samples, an issue unique to mixed method designs. This legitimation type questions the extent to which it is appropriate for a small, purposeful qualitative sample to accurately suggest contextual information in relation to more generalised, quantitative data, an issue that is particularly relevant to this design.

As a relatively new and unchallenged source of guidance in the pursuit of quality, Onwuegbuzie and Johnson's work appears remarkably comprehensive and appealing. For this reason, their framework of legitimation is adopted for this study and the extent to which the study is threatened is assessed – see Table 4.1.

Legitimation Type	Description	Danger to the quality of the study	Method for control	Outstanding risk
Sample Integration	The extent to which conclusions drawn from case studies schools may be accurately applied to larger quantitative sample	High There is a danger of assuming that factors affecting the success of SEAL in case study schools are representative beyond the confines of the individual school. However, this threat is unidirectional as quantitative inferences will apply to the case schools (as they are part of the quantitative sample)	The case study schools are also part of the quantitative sample share at least some common values Multiple case studies allow the comparison of significant factors across several diverse schools and will give at least some indication of uniqueness	High To ensure quality, there must be very tentative conclusions in regards to generalising case study findings. Significant factors will suggest direction for further investigations but do not conclusively suggest the prevalence of such factors in the quantitative sample
Inside-Outside	The extent to which meta-inferences accurately reflect both the views of; a) insiders of a system e.g. school staff b) outsiders observations	Medium A strength of the design is the contribution of both 'inside' and 'outside' views as there is relatively balanced contribution from all methods	Data are collected from a variety of levels, including the 'insiders' as school staff, but also across schools for objective comparison and as an 'outsider' collecting survey data from pupils	Low An overtly ethnocentric or 'native' viewpoint would make research question 4 unanswerable the synthesis of both approaches e.g. the comparison of qualitative and quantitative data are required
Weakness minimization	The extent to which weakness from one approach is compensated by the strengths from the other approach	Medium This issue is closely related sample integration as the extent to which case study data can account for quantitative findings is limited	As far as possible, issues of quality will be dealt with on an individual tool level – see tools	Low The opportunities to acknowledge and deal with weakness in individual tools are plentiful and are dealt with accordingly - see tools
Sequential	The extent to which meta-inferences are	High The sequential 'threat' is an	The study timeline is fixed and this difficulty is integral	High This is another cause to treat the

	result of the sequencing of the data collection its-self. E.g. results would be different if the order of qualitative and quantitative phases were reversed	integral difficulty to the design as it is likely that case schools are affected by the scheduled visits, and as such the factors of implementing SEAL are distorted	with a concurrent design.	findings from the case schools with caution
Paradigmatic mixing	The extent to which competing or complementary paradigms are successfully integrated into a single study	High Competing dualisms might impact upon the quality of the study, especially given that research Question 5 requires the synthesis of both approaches	The adoption of a pragmatic framework assumes methodologies to be complementary rather than dualistic	Low There is little residual difficulty providing values associated with particular methodologies are acknowledged and clearly stated
Multiple Validities	This addresses the already present measures of 'validity' in single methodology research (both qualitative and quantitative)	High This is an important factor as failure to attend to measures of validity within methodological strands would produce a study of very poor quality	Appropriate measures of quality are applied to research methods independently of any other methods used (see section 4.5)	Low This threat is no lesser or greater than any other study utilising the same methods
Political	The extent to which inequalities in an individual's perceptions of methods affects interpretation of meta-inferences	Medium There is a danger of political misrepresentation of data, but it is for the consumer to deal with their own bias rather than attempt to pre-empt any methodological favouritism	A pragmatic framework requires a researcher to explicitly state any inherent values within the research, however little can be done for the biases of the potential consumer	Low This threat is present, although the results of the study in all forms should be of interest to those involved (both researcher and schools)

Table 4.1 Risk Assessment of design 'quality' - Adapted from Onwuegbuzie & Johnson (2006)

4.5 Design

The design of the current study is described as an '*embedded quasi-experimental design*' (Johnson & Onwuegbuzie, 2004) also known as a '*concurrent, nested mixed methods design*' (Creswell et al., 2003). In simpler terms, both definitions are used to describe a study where one particular methodology drives the main focus of the research and the other provides a supportive, secondary role based on the findings of the first. In this instance, quantitative methods i.e. the collection of survey data from pupils (see section 4.7) are used to assess level of impact and qualitative methods will attempt to explain and add context to the findings (Figure 4.2).

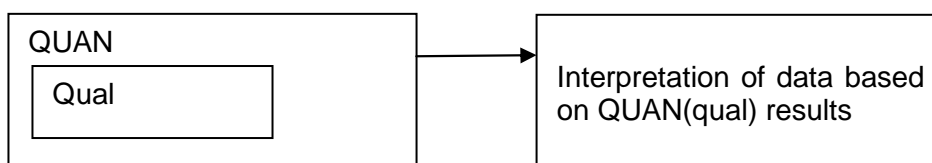


Figure 4.2 The embedded mixed methods design (Creswell & Plano Clark, 2007)

The advantage to such a design is that priority can be given to one particular strand of data collection, in this case quantitative survey data (as denoted by capitalisation of the term (Morse, 1991)). This is because, although limited time and resources restrict the amount of analysis that can be performed on the qualitative data, the added power and value of including actual responses from the individuals involved in the quantitative aspects of the study is still achievable. This allows the addition of context and meaning to the quantitative results, and therefore provides a more powerful analysis than otherwise could be achieved with a non-mixed methods design.

The study is further enhanced by its longitudinal design, which provides the opportunity to analyse changes in pupil's skills and behaviours over time. Given the optimum sample size, this would be infeasible using qualitative methods. This is an advancement over previous designs which are noted for their lack of a longitudinal element when assessing the relative success of the programme (e.g. Resolving Conflict Creatively (Aber et al., 1998)). A longitudinal evaluation is also a necessity when investigating factors such as school climate as these elements are noted as important in establishing success in programme impact, and may change significantly

within the typical SEL programme evaluation timeframe (e.g. less than one year) (Zins et al., 2004).

In practise, the quantitative survey data will be collected at three time points; at the beginning of the project immediately before SEAL is implemented in schools (Time 1), half way through the duration of the study (by which time SEAL will have been running for one school year) (Time 2), at the end of the study (at which point SEAL will have been running for two years) (Time 3). Throughout this period, visits are conducted in a small selection of case study schools where a range of qualitative data are collected. The overall design of the study is shown in Figure 4.3. Specifics of the project timescales are included in appendix 1.

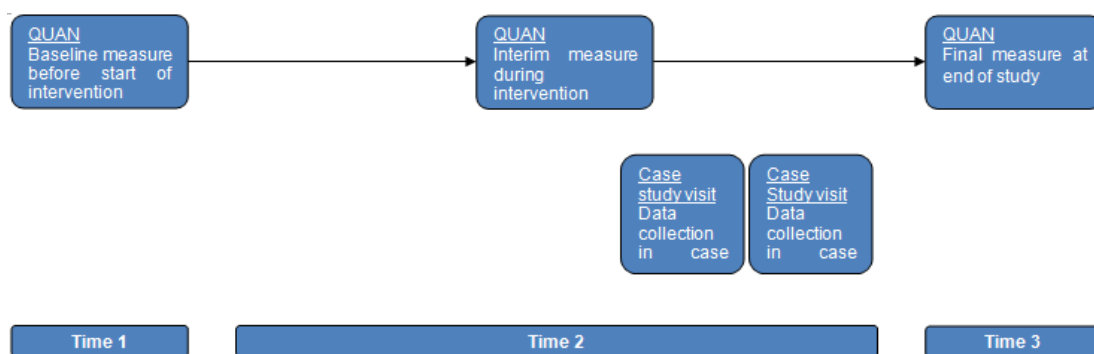


Figure 4.3 Detailed view of the embedded mixed methods design (adapted from Creswell & Plano Clark, 2007)

4.5.1 Quantitative approach

The quantitative aspect of the research is designed to address research questions 1, 2, 3, and 4, which focus on measuring variations in outcomes. This aspect of the study is designed on the principles of multi-level modelling (MLM), an advanced form of multiple regression. This approach is in direct response to some of the methodological criticisms of previous studies (section 3.4.4), as it offers several unique advantages in representing the collected data. Full details are provided in the following sections.

4.5.2 Qualitative approach

The purpose of the qualitative aspect of the design is to add context and meaning to the quantitative results, through the inclusion of 'front-line' data from those directly involved, such as quotes from staff and pupils. Such an approach is in line with recommendations from Onwuegbuzie and Johnson (2006) and their requirements for a valid study (see Table 4.1). A further advantage of this approach is the exploration of disparity between qualitative and quantitative measures of impact. Similar studies have shown a lack of quantitative impact is not always mirrored in the comments of those involved (Humphrey et al., 2008) and is part of the methodological limitations of previous studies (see section 3.4.4). A framework for data collection is derived from a US based study of implementation (Greenberg et al., 2005) which also uses a hierarchical approach to data and therefore offers a good strategic fit with the quantitative aspect of the study. Full details are provided in the following sections.

4.5.3 Implications of design

First, in regards to Onwuegbuzie & Johnson's (2006) sample integration legitimization (Table 4.1), there is an important question as to the extent to which case study data are able to accurately inform the study of significant contextual factors that may be present within a wider population. Obviously, the data from only nine case study schools is too severely restricted to be considered a representative sample. Therefore, there is significant risk in incorrectly attributing factors identified in case study schools to the larger sample of longitudinal schools as there is no measure of the *frequency* of occurrence of any identified factor. In order to tackle this particularly difficult issue, the case study data will be analysed for the *likelihood* of the occurrence of identified contextual factors in other schools instead. For instance, finding that long-term illness of a SEAL lead in one particular case study school is associated with less impact (both by admission of staff during interview, and as a result of a comparison with the statistical analysis of the questionnaire data), this may be considered a unique contextual variable as the likelihood of such an occurrence in other schools is quite low. Conversely, a SEAL lead reporting lack of time available to successfully implement SEAL given the range of other initiatives they are responsible for (which is a likely scenario), is considered more likely, especially if consistent with previous research. The case study element is intended to illuminate the quantitative findings and is therefore suitable for exploratory analysis only, and is

not intended to make any conclusive statements. The ability to make any comment on quantitative findings in relation to qualitative exploration is due to the advantages of a pragmatic framework, as other perspectives would consider such an approach incompatible or invalid (e.g. a social constructionist methodology is not compatible with measures of change within a population). Multiple cases are included within the design as a greater degree of variation can be assessed, especially given the range of different types of schools involved. It is not suggested that the limited size of the case study is representative of all longitudinal schools, or the wider population but it is suggested that a greater range of potential factors may be identified through the use of multiple cases.

Second, a key feature of the design is the non-random selection and allocation of schools into case-study, longitudinal, or matched comparison schools. As detailed in section 4.5.4, the initial selection and allocation of schools to one of the two conditions was based on a combination of preferential selection and willingness by the school to participate, creating a situation where there was no random assignment of school. As methodological rigour is a particular aim of this study, there is a question as to the value of a study attempting to make inferences on a wider population by using a sample of pre-selected schools, especially as randomised control trials (RCT) are favoured 'gold standard' of evaluation research (Department for Children Schools and Families, 2008b). Despite the advantages an RCT design would bring, application of such rigorous designs are notoriously difficult in educational research (Lagemann & Shulman, 1999) and a truly experimental design would have proved near impossible given that SEAL status (e.g. a school choosing to implement SEAL) was not a variable controlled by the researchers. The adoption of the SEAL programme was a decision made by the school and LA staff. Although this creates immediate bias within the sample, especially as it is possible that only the most socially and emotionally proactive schools will have attended the initial launch conference and subsequently been invited (see section 4.6.1) this is a necessary feature of the current design and is not necessarily detrimental:

"Choice is the very condition of social and individual change and not some sort of practical hindrance to understanding that change" (Pawson & Tilley, 1997 p.36)

In the context of Pawson & Tilly's quote, it is the selection of schools willing to implement SEAL that this study requires. Therefore, although any findings may be positively skewed towards schools that take more than an average interest in social

and emotional learning, that effectively is representative of the population to which the findings will extend.

In an effort to present research as rigorous and authoritative as possible, a comparison element has been included in the design in attempt to control for a number of other potentially confounding variables, the implications of which are now discussed.

4.5.4 The role of matched comparison schools

The inclusion of a sample of 'matched comparison' schools is an attempt to control for any variation caused by the range of initiatives already present in school that may influence the pupil level outcomes being assessed.

Schools have access to a range of programmes and policy designed to guide many aspects of pupils' development. Whereas none as yet are as extensively focused as social and emotional learning as SEAL offers such a potentially radical change to school climate and ethos, this is not to discount the potentially confounding effect of similar programmes (see Figure 1.3) or governmental policy, such as 'Every Child Matters' (Department for Education and Skills, 2003). This is especially true given the SEAL schools preference towards developing pupils' social and emotional well-being.

In an effort to counter this difficulty, a range of 'matched comparison schools' were selected to participate in the current study. Schools were matched by a number of criteria to each SEAL school in an attempt to best represent the conditions found in the schools implementing SEAL. This included, geographical proximity, GCSE pass rate, unauthorised absences, size of school, percentage of pupils receiving SEN provision and free school meal eligibility, The matched comparison schools were intended to act as a mediator for extraneous factors such as developmental effects or other initiatives (as we would expect these to vary naturally across the entire sample of SEAL and matched comparison schools). Further details are provided in the following sections.

4.6 Participants

4.6.1 Initial participant selection

SEAL schools willingness to participate in the current study was initially identified by their attendance at the SEAL national launch conference in October 2007. School addresses of the (approximately 359) attending delegates were obtained and then were subsequently sent a brief questionnaire querying the current status of SEAL implementation as well several questions investigating the broader social and emotional climate of the school. Included in this questionnaire was the option to participate in the current research study, either as a case study or comparison school, or not to participate at all (see appendix 2). Questionnaires were returned to the research team in a freepost envelope, which then provided a 'pool' of possible schools to select from. Although this method in all likelihood created a bias towards schools that were sufficiently committed to SEAL implementation to warrant return of the questionnaire (and willingness to participate in the research), it would have been extremely problematic to recruit and retain schools through a more random selection procedure.

From the 208 replies, 25 SEAL schools were selected by invitation, based on geographical national representation (for the longitudinal sample) and geographical convenience (for the case study strand).

Following the selection of the SEAL schools, 25 matched comparisons schools were identified by reviewing salient features common to the school environment and subsequently identifying similar schools in the local area that most closely matched. This case control strategy involved using OFSTED performance tables (Department for Children Schools and Families, 2006) to identify schools in the local area that most closely matched the following matching parameters:

- Comparison School within 15% of A*-C% pass rate of the LEA average

- Comparison School within 1% of the SEAL schools unauthorised absence record

- Comparison School within + / - 300 of total number of pupils in the SEAL School
- Comparison School within 5% of the closest match of pupils receiving SEN provision compared to the SEAL school.

This level of selection and matching detail is beyond that encountered in the majority of previous reviews of social and emotional learning programmes (see section 3.4.4).

Although the optimum sample was intended to comprise of 50 schools (25 SEAL, 25 Comparison) early attrition lead to an initial sample of 49 geographically diverse schools, representing 8630 pupils.

Of this sample, 23 schools indicated they would not implement SEAL within the period of the study, and are designated matched comparison schools. The remaining 26 Schools indicated their intention to implement the SEAL programme from the first year of the current study and are subsequently designated 'SEAL Schools'. Of these 26 longitudinal schools, 9 schools were selected for additional case study visits. Attrition over the period of the study meant that the final valid sample was smaller than either the optimum or actual sample collected at the beginning of the project. School level attrition is discussed in section 5.21 and the details of the final valid sample are summarised in Table 4.2

4.6.2 School characteristics

School	Level of Participation in Study	Optimum Sample Size	Final Valid Sample (Valid responses at Time 1 & 3)
Comparison	ELAI: Time 1,2,3 SDQ: Time 1,2,3	25 (max. pupils) 4635	19 Schools (approx 1846 pupils)
SEAL	ELAI: Time 1,2,3 SDQ: Time 1,2,3	25 (max. pupils) 4635	22 Schools Approx. 2245 pupils)
Of the 26 SEAL schools: Case study	Qualitative Case study visits	10	9

Table 4.2 Breakdown of initial school participation

	Sample	National Average	t-score	P value	Effect size (d)
SEAL					
Number of Schools	22	-	-	-	-
Average attainment	47.55 (s.d. 18.79)	50.7**	-5.426	<0.01	0.16
Average FSM Eligibility	13.94 (s.d. 11.5)	13.4*	0.178	0.859	0.04
Average unauthorised absence	1.24 (s.d. 1.33)	1.49***	-9.582	<0.01	0.18
Average size	1219.2 (s.d. 327.11)	975*	32.740	<0.01	0.75
Average number of pupils with SEN within year	18.04 (s.d. 11.53)	7.18**** (average of all years)	No like values to compare	-	-
Comparison					
Number of Schools	19	-	-	-	-
Average attainment	45.06 (s.d. 16.57)	50.7**	-12.038	<0.01	0.34
Average FSM Eligibility	11.51 (s.d. 7.96)	13.4*	-11.447	<0.01	0.10
Average unauthorised absence	1.58 (s.d. 1.61)	1.49***	1.411	0.158	0.05
Average size	1078.6 (s.d. 252.84)	975*	15.868	<0.01	0.41
Average number of pupils with SEN within year	20.81 (s.d. 12.47)	7.18****(average of all years)	No like values to compare	-	-

* (Department for Children, 2009), ** (Department for Children, 2010a),
 *** (Department for Children, 2010b), **** (Department for Children, 2007)

Table 4.3 School characteristics and national trends

The data shown in Table 4.3 demonstrate two key trends. First, in terms of comparisons with national averages, the SEAL and comparison school characteristics appear to be broadly similar to secondary schools across England. This is because that although one sample t-tests indicate a significant difference, corresponding effect sizes (as measured by d in line with recommendations by Field, (2009)) show that any identified differences are not of a meaningful magnitude. The one exception is the variable 'average size' which indicates the total of number pupils

in school. Although the size of the effect is considered large (as defined by Cohen, (1992)) this result must be interpreted with caution, as it requires a large number of pupils to significantly impact upon a school. (e.g. only the very smallest or largest of schools will display differences in average class size as a result of pupil numbers). Second, in terms of the comparability of SEAL and comparison schools, the two groups did not differ on any of the five characteristics presented above. The descriptive statistics analysing the statistical significance of differences is discussed in section 5.3.2.

4.6.3 Pupil characteristics

	SEAL	Comparison	National average	
Sex (% Female)	52	52	49	
Ethnicity (%)	White			
	White British	80	74.7	85.4
	Irish	0.2	0.3	0.1
	Traveller of Irish heritage	0.1	0.1	0.1
	Gypsy/ Roma	0.1	0.2	0.1
	Any other White background	1.9	3.9	2.5
	Mixed			
	White and Black Caribbean	0.7	1.3	0.4
	White and Black African	0.3	0.5	0.1
	White and Asian	1.1	0.9	0.8
	Any other Mixed background	1.3	1.5	0.5
	Asian			
	Indian	1.0	2.5	1.0
	Pakistani	3.8	3.9	1.9
	Bangladeshi	0.8	1.6	0.4
	Any other Asian background	0.8	1.3	0.4
	Black			
	Black Caribbean	0.6	1.4	0.2
	Black African	2.0	2.9	1.2
	Any other black background	0.3	0.6	0.0
Chinese	0.8	0.3	0.3	
Other	1.2	1.4	1.0	
SEN (%)*	No SEN	83.7	81.2	81.3
	School Action	9.9	11.6	14
	School Action Plus	4.4	5.1	3.5
	Statement	2.0	2.1	1.2
FSM eligibility (% not eligible)	86.5	88.4	86.9	

Table 4.4 Descriptives of pupil level sample and national trends

In regards to the figures shown in Table 4.4, it can be seen that SEAL and comparison schools are demographically similar. Both SEAL and comparison schools also compare favourable to the national average. Table 4.6 provides full details of what the variables measure and how they were obtained. For further details of the descriptive statistics analysing the statistical significance of, see section 5.3.2.

4.6.4 Sample size calculations

Maintaining an appropriate sample size in order to detect an effect is a particular issue for MLM as it is important to maintain an appropriate size for each level of the model (Raudenbush & Bryk, 2002). However, recent studies have provided an acceptable procedure for calculating effect size (Cohen, Cohen, West, & Aiken, 2003; Twisk, 2006) in reference to expected sample sizes at the appropriate levels.

Both Time 1 and previous similar studies (Humphrey et al., 2008) were used to indicate the appropriate corrections to the expected variance at the pupil level. Given the large number of schools, and the high degree of pupil variance in the aforementioned analyses, the inter cluster correlation was set at 99% to ensure a higher level of rigour than expected.

Sample size calculations (see appendix 3) indicates a minimum of 16 schools with an average of 81 pupils would be required to detect a small effect size ($f^2 = 0.02$) with 14 predictor variables. As can be seen from Table 4.2, the final sample far exceeds the minimum requirements to detect the smallest of effect sizes, and can also be considered nationally representative as it achieves 99% confidence levels (with a sampling error of 1.5%) for a total population of 647,000 (the total number of 11 year-olds in England (Office of National Statistics, 2009)).

4.7 Methods and instruments

Self-report methodology is an immensely practical method for sampling the large sample of pupils involved in the current study, in part due to its relative ease of administration and scoring (Chapman, 1988) as respondents indicate their level of agreement or disagreement with a series of statements. Also, using the child as the

central respondent is advantageous for a number of reasons (Wigelsworth et al., 2010). For instance, through introspection, the child is arguably the most qualified to judge their own responses when compared with other potential respondents such as teachers or parents. This is in line with recent policy and legislation that has placed increasing emphasis on the importance of evaluation from the child's perspective (Department for Education and Skills, 2004). Equally, in respect to this study, seeking the child's views may be the only practical way forward as it is much more realistic to sample individual children than to ask teachers to fill in individual questionnaires for each child in their class (which could be more than 30) and expect equally valid results.

Despite the relative ease and practicality of self-report as a method, there are some limitations to this approach which restrict the impact of any findings.

Most importantly, self-awareness follows a developmental trajectory and therefore younger respondents are likely to generate less accurate results than older children or adolescents (Denham, 2005). This issue is particularly true when assessing issues of self-concept, which is incorporated into the theoretical framework of SEAL as 'self-awareness' (Department for Education and Skills, 2007a) and is also included in the questionnaires issued to pupils (see Table 4.5). However, the use of control schools is a useful answer to this difficulty.

Also important is the nature of the respondent to provide socially desirable responses when completing the questionnaire and (for young children in particular) how responses can be biased towards 'the here and now' rather than summative judgements covering a period of time (that is, a young 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) (Southampton Psychology Service, 2003). However, the current sample size should prevent all but the largest variations in effecting the results.

On a practical basis, a third important issue is that the general quality of available tools for assessing social and emotional skills is quite poor. As discussed previously, the cited poor methodological rigour and contested nature of the EI construct is evident in the range of tools available for its assessment. The current status of available tools has been discussed in separate review papers (Humphrey, Kalambouka, Lendrum, & Wigelsworth, 2009; Wigelsworth et al., 2010), and therefore the issues surrounding available tools will only be summarised here:

Use of terminology - Inspection of the relevant literature suggests that differences between terms are not necessarily significant when compared to the similarity of features, and that these terms are in fact largely interchangeable. Therefore when selecting a tool, its underlying theoretical construct which informs the items and domains should be scrutinised, rather than the title or brief of the instrument in question.

Scope and specificity of measure – Available tools for assessing children’s social and emotional skills are largely characterised by either a narrow focus on a single aspect of socio-emotional cognition (e.g. the Emotional Dysregulation Scale (EDS) (Penza, Zeman, & Shipman, 1998) or a protean, all-encompassing series of domains that are “bereft of any conceptual meaning” (Zeidner et al., 2002, p. 215). Instruments that provide an overview of all aspects of a pupil’s social and emotional ability whilst offering a clear construct in which to do so are extremely limited.

Different types of measure (maximal / self-report) - Measures of social and emotional skills are typically either a typical behaviour measure (e.g. self / informant report response to statements such as such as ‘I am good at identifying other people’s emotions’) or a maximal behaviour measure which requires respondents to complete tasks that tap the underlying construct in question (e.g. a respondent is shown a picture of a face and asked to describe how the person is feeling).

In addition to the variety of difficulties inherent in either approach (e.g. in maximal scoring, difficulties in establishing what is considered a correct score, high levels of bias and favourable responding in self-report methodology), the correlation between *typical* and *maximal* measures of social and emotional skills are usually very small (Brackett & Mayer, 2003; Humphrey et al., 2008). Therefore there is a serious question as to what exactly is being measured when using either approach.

Extent of development - many of the tools available for the assessment of children’s social and emotional outcomes have yet to be subjected to any form of normalisation or advanced construction analysis (e.g. confirmatory factor analysis, item response theory). Humphrey (in press) raises further serious questions as to the reliability and validity of the tools in question.

It is clear that there are numerous difficulties in selecting a tool that is reliable, valid and suitable. As Wigelsworth et al (2010) note, no single test battery has been

singled out as being suitable for assessing social and emotional outcomes, and ultimately some compromise in regards to the above criteria must be made.

4.7.1 Additional criteria for selecting tools

Given the above limitations in the availability of tools assessing social and emotional outcomes, choice of an appropriate tool was further limited by the requirements of the study:

- The selected tool was required to have a close proximity to the underlying theoretical framework of SEAL (Goleman, 1996)
- The selected inventory had to be constructed and standardised with age appropriate questions for pupils in secondary schools (including appropriate reading and comprehension for ages 11-14 years)
- The battery had to be easy and quick to complete, as to be suitable for distribution by school staff and completion by individual pupils (i.e. there must be no form of open scoring or complexity in responses)

Emotional Literacy Assessment and Intervention battery (ELAI) (pupil version)

In order to monitor and assess changes in pupils' social and emotional skills, the Emotional Literacy Assessment and Intervention battery (ELAI) (Southampton Psychology Service, 2003) was selected. The ELAI is a non-clinical tool for use in schools and is designed to highlight strengths and weakness in various aspects of a pupil's emotional literacy. The measure consists of 25 statements (e.g. '*I get upset if I do badly at something*') to which the respondent indicates a level of agreement on a four-point Likert scale. Participants receive an overall ELAI score ranging from 25-100. A higher score indicates greater social and emotional skills. As a broad indication, total scores of less than 69 in the self-report version are considered to be 'below average', and thus a possible cause for concern. It takes approximately 5-10 minutes to complete. The tool is appropriate with children aged 7-16 years), and is therefore appropriate given the age of the pupils in the study.

There are a number of benefits to using the ELAI. One significant advantage is that the ELAI is based on the same theoretical basis of SEAL (Goleman, 1996), and both

tool and programme share the same five dimensions of emotional literacy (see Table 4.5). Also, the ELAI has acceptable internal consistency (Cronbach's Alpha for the self-report version is 0.75) and has been demonstrated to have good factorial validity (established using principal components analysis) (Southampton Psychology Service, 2003). Finally, it is recommended for use in the evaluation of SEAL by both the Government (DfES, 2006) and experts in the field (Mosley & Niwano, 2008).

One disadvantage of the ELAI is the lack of higher levels of internal consistency for each of the SEAL domains (see Table 4.5), preventing a more detailed investigation into the domains of EI. However, there are very few tools capable of assessing all the SEAL domains within a single inventory (Humphrey et al., 2009). On an additional note, the ELAI relies exclusively on typical scoring responses, and therefore would not be expected to correlate with previous studies using alternative scoring methods.

Strength and Difficulties Questionnaire (SDQ) (pupil version)

The Strength and Difficulties Questionnaire (SDQ) (Goodman, Meltzer, & Bailey, 1998) is a brief behavioural screening questionnaire for use with children and adolescents. Its role with this study is to screen for changes in behaviours related to mental health and well-being over the course of the project.

The SDQ provides data for the domains of emotional symptoms, behaviour problems, hyperactivity/inattention, peer problems, and pro-social behaviour. The first four of these domains can be combined in order to generate an index of general mental health difficulties. The measure consists of a series of statements (e.g. 'I worry a lot') to which the respondent indicates a level of agreement on a three-point Likert scale. Participants receive a total difficulties score ranging from 0-40, and individual pro-social behaviour and behaviour problems scores that range from 0-10. For total difficulties, a score of 20 or above is considered to be abnormal and indicative of possible mental health disorder(s). Likewise, scores of five or above and four or below in the behaviour problems and pro-social behaviour subscales are also considered to be a cause for concern. The self-report version of the SDQ was developed for use with 11-17 year-olds and is therefore appropriate for current study sample.

The SDQ offers several advantages in light of the current study. The SDQ has strong psychometric properties, including factorial validity (established using factor analysis), internal consistency (Cronbach's Alpha average is 0.73), test-retest stability (average co-efficient of 0.62 over 6 months) (Goodman, 1997, Goodman and Scott, 1999). The SDQ displays strong correlation with other well established behaviour screening tools such as the Rutter scale (Goodman, 1997), the Child Behaviour checklist (Goodman & Scott, 1999; Koskelainen, Sourander, & Kaljonen, 2000) and the HoNOSCA (Mathai, Anderson, & Bourne, 2003). Therefore the SDQ is as suitable as other well established measures, with the additional benefit of being faster and easier to administer. Finally, the inclusion of a positive scale (focusing on strength) means the questionnaire is more optimistically orientated to the pupils.

Copies of both inventories are included in Appendix 4.

	Emotional Literacy: Intervention and Assessment (ELAI) (Southampton Psychology Service, 2003)	Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997)
Purpose in Study	Assess change in pupil's social and emotional skills (RQ 1, 4)	Assess change in pupils mental health and pro social behaviours (RQ 2,3,4)
Age Range	7-16 years	11-16 years
Theoretical Framework	(Goleman, 1996)	Clinical Practice
Domains	Self-awareness (5 items) Self-regulation (5 items) Motivation (5 items) Empathy (5 items) Social skills (5 items) Total emotional literacy (total)	Conduct problems (5 items) Hyperactivity (5 items) Peer problems (5 items) Emotional Symptoms (5 items) Pro-social (5 items) Total difficulties (Total)
Response scale	Very much like me = 4 Quite like me = 3 Only a bit like me = 2 Not like me at all = 1	Certainly true of me = 2 A little like me = 1 Not true of me = 0
Internal Consistency (α)	SA = 0.47 SR = 0.58 M = 0.68 E = 0.56 SS = 0.58 Total emotional literacy = 0.75 (Southampton Psychology Service, 2003)	total difficulties = 0.80 pro social behaviour = 0.66 (Goodman, 2001)
Interpretation of scoring	25 – 64 Well below average 62-66 Below average 67-78 Average 79-83 Above average > 83 Well above average	<u>Total Difficulties</u> 0-15 Normal 16-19 Borderline 20-40 Abnormal <u>Pro Social</u> 0-4 Abnormal 5 Borderline 6-10 Normal
Examples of use in prior UK studies	(Humphrey et al., 2008) (Downey & Williams, 2010)	(Goodman, Ford, Simmons, Gatward, & Meltzer, 2000) (Goodman, 2001) (Meltzer, Gatward, Corbin, Goodman, & Ford, 2003) (Muris, Meesters, Eijkelenboom, & M, 2004) (Green, Mcginnity, & Melzer, 2004)

Table 4.5 – Characteristics of selected tools

4.7.2 Socio-demographic data

In an effort to advance research in this area and offer a more accurate assessment of factors associated with social and emotional learning, a variety of socio-demographic variables, made available through the National Pupil Database (NPD), were included in the analyses:

Gender

Gender differences have been previously identified as significant in relation to social and emotional based outcomes, as many studies report that women perform significantly better than males in tests of EI (Schutte et al., 1998; Mayer, 1999; Day & Carroll, 2004) and several measures of personality utilise separate scoring keys in relation to this fact. However, these findings are not universal, as several studies are unable to replicate gender differences (Bar-On, 1997) (possibly as a result of the particular domains measured and underlying theoretical models) and there have been calls for further studies in this area (Van Rooy, Alonso, & Viswesvaran, 2005a). Although the current scoring scales present different mean scores for gender, they do not differentiate between boys and girls when assigning individual participants to various categories (e.g. 'abnormally high total difficulties', or 'well below average emotional literacy', although the SDQ does make some concession as to variations of country age and gender). Given conflicting findings and need to differentiate gender when applying the selected inventories, there is a clear justification for assessing the role of sex in mediating social and emotional literacy (as measured by the ELAI) as well as mental health (as measured by the SDQ).

Ethnicity

Despite substantial study of ethnic group differences in regards traditional forms of intelligence e.g. (Suzuki & Valencia, 1997), research linking EI and ethnicity is virtually non-existent. For the few studies that have been conducted (Bar-On, 1997; Bar-On & Parker, 2004), the emphasis has been on examining normative samples of test construction. Although the cited examples did not reveal any significant differences, the use of a single tool used in this context is far too limited to make any definitive judgement as to the variation of EI amongst ethnic groups. In one of the few studies evaluating ethnic group differences (Roberts et al., 2001), results were

found to be conflicting leading authors to state that, “*There is currently an urgent need for studies exploring group differences in EI*” (Roberts et al., 2001 p.270).

For this reason, ethnicity was included as a variable within the study in order to assess its potential contribution to explaining variation in emotional skills both within and across schools.

Level Special Educational Needs (SEN) provision

Although a handful of studies cite a link between learning difficulties and a deficiency in a variety of affective measures (Reiff, Hatzes, Bramel, & Gibbon, 2001), research linking SEN and EI has received even less attention than the link between EI and ethnicity (the work of Reiff et. al (2001) appears to be the one notable exception). Despite the lack of explicit link between SEN and EI, there are theoretical reasons in relation to proposed model of EI as to why SEN provision is justified to be included as a variable within the study.

In relation to interpersonal skills, (one domain in Bar-On's (1997) conceptualisation of EI and closely related to the ‘social skills’ SEAL domain) literature suggests that children identified with learning difficulties have trouble making friends and forming relationships (Ochoa & Palmer, 1995). Consequently there is a strong suggestion that pupil's ability to utilise this particular domain of emotional intelligence is related to at least some form of SEN. Similar theorising is applicable to the domains of self-awareness as several studies identify difficulties in SEN pupils applying intrapersonal skills, such as reporting accurate self-concept e.g. (Alexander-Passe, 2006; Galbraith & Alexander, 2005). Given that the SEN provision covers a range of learning and behavioural difficulties, many of which bear little relation with each other, there is obviously going to be a high degree of variation in the extent to which being on the special needs register affects an individual's social and emotional skills, especially as given the confidential nature of the data, no information is available on the nature of the SEN provision each child receives. However, the strong theoretical justification for its inclusion, as well as the lack of research in this area, means that SEN was used as an explanatory factor in the analysis.

Socio-economic status

Socio-economic status is another variable that, although is often associated as a predictor of a variety of important outcomes (e.g. self-esteem, happiness, attainment (Easterlin, 2008; Twenge, 2002)), has yet to have been directly linked to EI in any

substantial sense. As data regarding the percentage of children living relative deprivation (as measured by free school meal reliability) is available, it was included in the analysis to search for any significant effect.

Inclusion of these variables in the analysis of the data offers two distinct benefits. First, it adds sophistication to the analysis by controlling for factors that would otherwise be considered unidentified variance, and therefore allows a more controlled approach to investigating the role of SEAL in producing favourable outcomes. Second, given the sizable gap in research in relation to possible relations between the identified variables and EI, (especially in a school aged sample), including these variables within the analysis may lead to further avenues for exploration and opportunities for future research. This for is because socio-economic status, as measured by eligibility for free school mean status, correlates highly with a range of economic indicators such as household income, parental employment status, quality of neighbourhood, which are included in more advanced indices of economic status (Lindsay, Pather, & Strand, 2006)

4.8 Quantitative data analysis

Given the size of the sample, the numerous variables available, and the need to overcome many of the aforementioned methodological weaknesses of previous studies, selection of an appropriate and rigorous forms of analyses are critical to producing appropriate and accurate results. For clarity, the various steps are outlined in relation to the order they were conducted.

Data validation

Prior to any inferential analysis, the data first underwent several procedures to ensure the data were both valid and robust. Missing data were analysed in relation to any discernable pattern in missing cases to ensure the final dataset was representative e.g. any missing cases are random and not as a result of non-completion by any identifiable group (e.g. pupils with SEN) or by question (e.g. those scoring particularly low choose not to respond).

Data requirements

Data were screened in relation to the expectations of the forms of the analysis used (e.g. MANOVA and MLM) in order to ensure accurate and reliable results. Consistent with the use of MLM, this analysis was conducted separately for school and pupil level variables (see Table 4.6).

Inferential statistics

Previous evaluations of SEL programmes have traditionally been concerned with determining the presence of any significant difference between groups (e.g. intervention and control schools) in effort to determine whether a particular SEL programme is attributable to improvements in outcomes.

This is a standard approach in comparing groups of individuals, and although in the context of the current study this method would indicate whether the impact of the SEAL programme is sufficient to differentiate its effects on a pupil's emotional literacy and behaviour, it does not necessarily accurately represent the full nature and disposition of the data. This is because that although traditional analysis of variance assumes that groups are formed predominantly on their membership to the variable in question (e.g. pupils are either part of a SEAL group or a matched comparison group). The actual reality is that pupils are in fact grouped or *clustered* by belonging to particular *schools*, each with their own particular characteristics (which may have an equal or greater on effect pupil's baseline emotional literacy and behaviour as well as and the degree of any development. Schools, in turn, are clustered by local authorities whose influence effects the composition and characteristics of a school. This inherent clustering of data causes several difficulties when dealing with traditional analyses:

Exclusion of contextual factors – Differences in pupil skills and behaviour may be a result of other contextual factors unrelated to the intervention (e.g. school level attainment) and therefore there is value in considering the role of other variables, rather than a simple does work / doesn't work dichotomy offered by statistical techniques typically used in this field (e.g. ANOVA).

Violation of assumptions – Analysis of aggregated group data assumes that different cases of data are independent. However, although pupils may be treated as independent cases, they are in fact clustered by school, and is likely that pupils from

the same school are more alike than pupils from different schools, therefore violating the assumption of independence required for an accurate interpretation of the results produced by traditional analysis (Field, 2009; Raudenbush & Bryk, 2002; Tabachnick & Fidell, 2007).

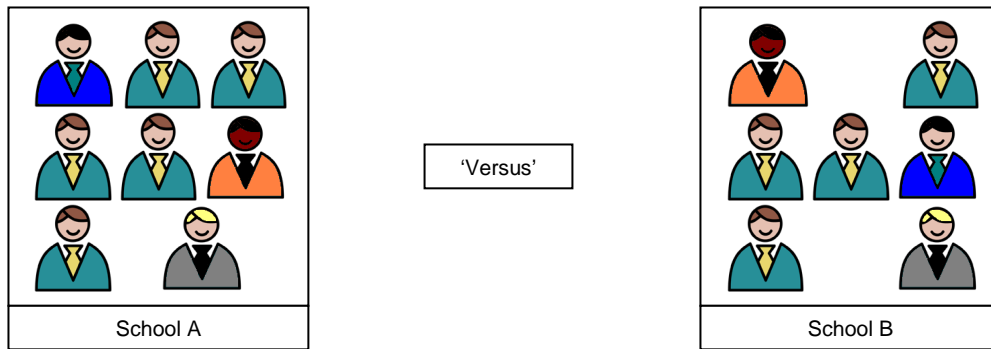
Both these difficulties mean that results can be insensitive to variations in the data which although can pass by unreported might actually significantly impact upon the results. Although more complex designs of traditional analysis can partially overcome these limitations (such as a nested, random effects ANOVA, (Tabachnick & Fidell, 2007)), an ideal solution to these difficulties is the use of multi-level modelling (MLM) techniques. These explain and account for the effect of inherent clustering, allow the inclusion of multi variables at different levels, and more accurately represent the underlying patterns of the sample (Paterson & Goldstein, 1991).

The use of MLM overrides some of the limitations of previous evaluations of school-based interventions that assume a dichotomous categorisation between intervention and control groups (Harachi et al., 1999) by instead modelling the data by the amount of variance explained by each variable, much like standard multiple regression. A comparison of the various techniques is shown in Figure 4.4.

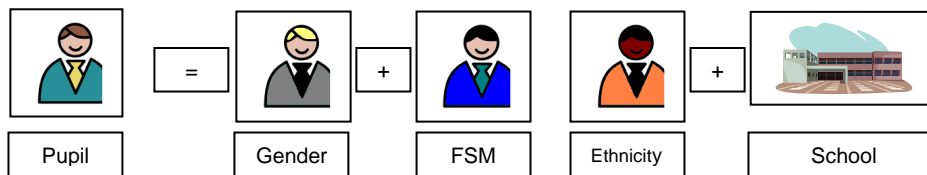
The advantage MLM has over other forms of regression is the ability to partition the amount of variance explained by each level and to include multiple predictors at the group (school) level. Using MLM for analysis means statements can be made as to what extent any changes in social and emotional skills, pro-social behaviour or mental health difficulties occur at the pupil, school or LA level, and to what magnitude. The advantage this approach has over traditional tests of difference is to be able to examine the relative contributions of various social demographic and contextual factors, as well as the contribution of the SEAL programme itself to changes in pupil skills and behaviours.

One difficulty in selecting appropriate variables to examine is the lack of similar research using these techniques, especially in school aged samples (Bickel, 2007). It is only recently that specialist software has made MLM accessible to a wider population, and combined with pragmatic difficulties in achieving large enough sample sizes for a meaningful analysis (Raudenbush, 2003), and practical limitations in the type of data available (e.g. access to pupil and school demographics) there are few studies on which to build an appropriate theoretical model. However, given the

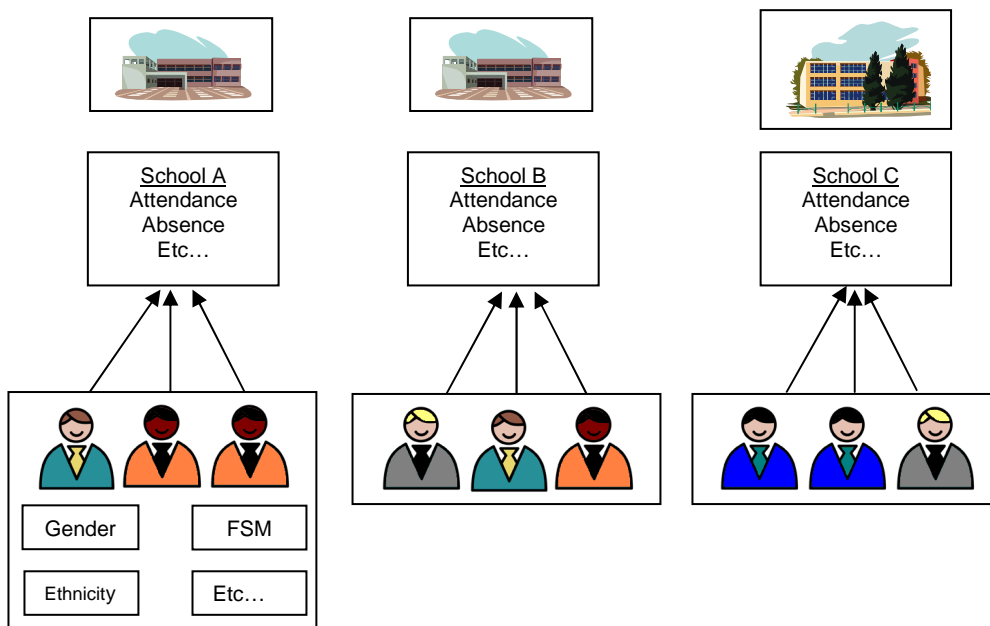
large sample size, access to the National Pupil Database (NPD) and DCSF performance tables, there is an opportunity to utilise the many advantages of MLM as an appropriate form of analysis in the current study and therefore expand the existing knowledge base in the area. This is especially true as, even with conservative estimates, the current sample was well beyond estimates required to identify an effect (Twisk, 2006) (see appendix 3).



Traditional 'test of difference' - ignores nested factors that may further divide the sample



Standard multiple regression – Use of grand mean and inability to add contextual factors to dummy variables means the data with a multi-level structure is not accurately modelled.



Multi-level modelling - Accurately partitions variance at several levels in the model, allowing the analysis of the relative contribution of the levels (even if they are very low e.g. strong pupil effect). This approach also overcomes the need for independent errors, a requirement present in most other alternative techniques.

Figure 4.4 Explanation of various analysis techniques

Details regarding the selection of variables are discussed in section 4.7.2. The full list of variables used in the analysis is shown in Table 4.6

Variable Name	Description	Source
LA Level		
LA Attainment	The average rate of GCSE passes (5 A* - C including English and Maths) in 2005 for all schools within the Local Authority.	DCSF Performance Tables (2005)
School Level		
Attainment	The average rate of GCSE passes (5 A* - C including English and Maths) in 2005 for the school	DCSF Performance Tables (2005)
FSM Eligibility	The percentage of pupils within the school receiving free school meals	Edubase (2007)
Aggregate SEN	The percentage of the current year group identified as receiving provision at school action, school action plus or at statement level	Aggregated from individual pupil data (2007)
Unauthorised absence	The average number of days per pupil lost by an unauthorised absence from school	DCSF Performance Tables (2005)
Size	The number of pupils on roll	DCSF Performance Tables (2005)
SEAL	Whether a school has decided to implement the Social and Emotional Aspects of Learning Programme (SEAL / Comparison)	Identified by attendance at SEAL launch conference Confirmed by school (2007)
Pupil Level		
Gender	The gender of the individual pupil (M / F)	National Pupil Database (2007)
Ethnicity	The parent-reported ethnicity of the pupil African / Any Other Asian Background / Any Other Black Background / Any Other Ethnic Group / Any Other Mixed Background / Any Other White Background / Bangladeshi / Caribbean / Chinese / Indian / Information Not Obtained / Irish / Pakistani / Refused / White and Asian / White and Black African / White and Black Caribbean / White British	National Pupil Database (2007)
FSM	Indicates whether the pupil is eligible for free school meal status (Eligible / Not Eligible)	National Pupil Database (2007)
SEN Provision Status	Indicates whether the pupil currently receiving provision for SEN (Non / School action / School action plus / Statement)	National Pupil Database (2007)
ELAI Score Time 1	Baseline emotional literacy scores	Data collection at Time 1

Table 4.6 Variables included in Multi-level models

4.8.1 Case study summaries

	SEAL	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS 10
Local Authority										
Average LA attainment %	42.8	34	57	45	26	26	57	33	44	55
School										
% Average attainment	48.3	32	13	39	17	33	99	33	54	34
FSM (% Eligible)	13.53	35	27	16	41	40	1	21	6	13
% Un- authorised Absence	1.18	0.2	0.1	0.2	1.4	2.3	0	2.2	0.9	2.3
Size	1222	1004	483	1023	908	1181	1161	884	1772	876
% SEN within Year	18.6	8.2	23.7	19.4	21.6	35.3	1.0	34.7	22.1	16.4
Pupil										
Ethnicity (% White British)	80.2	-	76.9	100	87.5	16.3	71.4	100	96.3	96.2
FSM (% Eligible)	11.8	-	23.1	17.9	42	33.7	0	0	7.4	5.8
Gender (% Male)	47.4	-	57.7	42	42.2	53.5	0	60	56.3	63.5
SEN Provision		-								
Non	85.8	-	84.6	85.7	85.9	70.9	99.2	60	82.2	88.5
School action	9.0	-	-	7.1	10.9	19.8	-	40	11.1	5.8
School action plus	3.8	-	15.4	3.6	1.6	3.5	0.8	-	-	3.8
Statement	1.4	-	-	3.6	1.6	5.8	-	-	1.5	1.9
Average ELAI score (Time 3)	73.4	-	71.2	73.7	71.1	76.4	73.9	71.2	74.7	72
Average total difficulties score (Time 3)	11.5	-	13.1	12.0	12.6	9.6	10.5	13.0	10.2	13.7
Average pro social score (Time 3)	7.5	-	7.4	7.6	6.8	7.3	8.5	6.3	7.1	6.5

Table 4.7 Case study summaries

Table 4.7 shows the distribution of the various demographics and scores of the case study schools, as well as the nature of the pupils who returned valid data at both Time 1 and Time 3. It can be seen that the selected case study sample represents a range of schools on the basis of the selected demographics (e.g. attainment, FSM eligibility, % SEN). The table also indicates that CS2 failed to return any Time 3 data, and has no valid data to record.

Both SPSS version 16 and MLWin 2.10 were used to analyse the quantitative data.

4.8.2 Qualitative tools

In relation to research question 5, a range of qualitative data collection techniques were used. A series of school visits were planned during the course of the evaluation (see Figure 4.3). Data was analysed in an attempt to explore various qualitative indicators of impact.

Similar to the quantitative analysis, a hierarchical approach was used to structure data collection, based on a previous US based study of school-based implementations (Greenberg et al., 2005) and to this end, data was considered from LA, school, and pupil level, for both qualitative and quantitative data (see Table 4.8). This had the dual advantage of ensuring views of stakeholders are represented as well as providing a good strategic fit to multi-level models produced from the quantitative data.

The frequency of the visits to the case studies schools allowed for a 'progressive focusing' approach (Stake, 2006) in which themes drawn from each visit informs the nature and direction of the next round of data collection. This presents a certain sophistication in data collection as visits were tailored to investigate more accurately potential topics of interest, and are increasingly 'customised' to the environment and interesting factors in individual case study schools. Despite this, there was also a framework of data collection common to all schools to ensure compatible and comparable data is collected and that cross-case analysis is possible.

Validation or 'quality' of data collected was continually assessed through use of techniques such as member checks with the individual schools and triangulation of different data sources (Robson, 2007), and this was considered to be a particularly

efficient method considering the volume of data collected at different times and the extent to which different members of staff offered the same information.

Data collection technique	Source
Local Authority Level	
Interview	LA staff
	Behaviour and attendance Consultants
School Level	
Interviews	Head teacher
	Senior management
	SEAL lead
	Teaching staff
	Non-teaching staff
	Classroom observations
	School observations (e.g. lunch time)
	School policy
Pupil Level	
Observations	Class observations
Focus groups	Pupils

Table 4.8 – Hierarchy of qualitative data collection techniques employed

Overview of qualitative data collection

Observations- The use of direct observation as a method of data collection is in direct response to the discrepancy between the intentions of staff as reported in interview and their actions. The effect of impression management or ‘socially desirable response’ is a well-known phenomenon in research (Given, 2008).

Observations are considered ‘structured’ as they were directed at the extent to which SEAL was practised within the classroom, but otherwise the researcher was free to record impressions of the class, playground or environment under observation as part of an overall ‘rich picture’ of the school.

Focus Group - The inclusion of pupil focus groups in the project ensured all levels of the hierarchical approach to data collection were covered fully (Greenberg et al., 2005) as any ‘rich picture’ of the school would be incomplete without some input by pupils (Flutter & Ruddock, 2004). Focus groups were used as they offer the advantage of providing a more informal atmosphere with the pupils and generated a conversational approach (for those pupils who may be intimidated by one-on-one interviews) and allowed canvassing of several opinions in one session. Prompts

were used to guide the session, however the potential responses were expected to be quite open ended.

Semi Structured Interviews - In order to canvas the views of as many of the levels and individuals as possible (as identified in Table 4.8), a series of semi-structured interviews were planned with different members of staff over the course of the arranged visits. In line with the overall strategy of 'progressive focusing'. Schedules and questions were increasingly adapted to the particular themes and issues of individual schools, although a common question pool was maintained to provide consistency of data for comparison over the course of the study. A semi structured approach was particularly suited to this approach as the flexibility of the interview allowed themes of interest to be explored without jeopardising the original purpose of the interview.

4.9 Qualitative Data Analysis

Consistent with a pragmatic epistemology, methods of qualitative data analysis were selected that best suited answering the research question, to that end, a combination of thematic coding (Flick, 2009) and content analysis (Mayring, 2000, 2004) techniques was used.

Thematic coding can be described as the selection and classification of relevant data into predefined, or 'a-priori' categories (Flick, 2009). A thematic coding strategy recognises the use of multiple cases (in this case each school represents a case, of which nine have been sampled). This is a useful conceptualisation as cross-analysis formed the bulk of comments made on the qualitative data (Miles & Huberman, 1994), as it is the prevalence and likelihood of identified factors occurring that is of interest (see section 4.5.3). A factor that sets thematic coding apart from other similar forms of qualitative data analysis is its use of creation of 'short case descriptions' built from the accumulation of data over time. This technique will be used to briefly assess how much a common 'story' can be created between schools (therefore commenting upon the likelihood of a school identifying with the factors described in the 'short case description'). As this method is based on constructivist epistemology e.g. Strauss (1987), it is suggested that a-priori codes are generated from an exemplar case. In line with the pragmatic framework of this study, this is rejected in favour of a-priori codes generated from factors of importance identified from

previous literature (Greeneurg et al., 2005) and the guidance book issued to SEAL schools (Department for Education and Skills, 2007a). Further details can be seen in section 5.12.

One disadvantage to the use of thematic coding is the inability to generate new or emergent codes and categories from the data as the study progresses. This is especially important as through the strategy of 'progressive focusing' it was expected that some of the more unique factors that are not necessarily suitable for cross case analysis but will have impacted upon SEAL implementation in at least one school may emerge. Given the limited number of case study schools, it was important to identify significant factors before commenting upon its likelihood or prevalence. In response, adoption of content analysis (Mayring, 2000) as an additional method of examining the qualitative data sought to correct this limitation. Adopting the procedure of content analysis was an attempt to supplement thematic analysis by allowing new themes to emerge from the data. The advantage to this particular approach is its strategy of freedom of creating codes, provided they are relevant to answering the research question. Content analysis is an active method of data reduction and so this approach compliments thematic analysis by allowing additional material to be revealed without the need to present data not directly related to the research question.

It is important to note that due to time and resource constraints, qualitative data analysis was a subservient methodology in this study and there was a limit to the extent to which data could be studied and analysed. This means analysis was conducted on a basic level, using the principles rather than specific procedures of the chosen analytical techniques. Categories represent overall themes rather than specific or differentiated factors and there was limited opportunities to re-visit data multiple times (especially given such volume). Therefore the qualitative analysis was considered as an exploratory approach in order to contextualise the quantitative data, and any conclusions drawn are extremely tentative. In order to manage the large volume of data, Nvivo 8 was used.

4.10 Ethical considerations

Ensuring a quality design is not complete without also considering the ethical implications of the research. The idea of research can be 'value free' and that

research can be conducted independently of participants or their environments have largely been discredited (Robson, 2007). This is especially true of research designs which include an element of evaluation, which presents several unique threats to both the quality of data collected and the well-being of the individuals involved.

Evaluative Nature of the Research - As ultimately the aim of the study was to comment upon the success or likely of impact of the SEAL programme both for individual schools involved and in a national context, a situation occurs where the participants within the study were also stakeholders in the 'success' of the SEAL programme. Participants were actively involved in the implementation of the SEAL programme and therefore may have felt they were being evaluated personally. This has obvious implications for potential harm to the self-esteem of teachers and staff being interviewed and therefore the purpose and nature of the study was made clear to all those approached.

The position of the researcher as a source of authority - Although the researcher may have been seen as a specialist with expert knowledge in a majority of designs, in other designs this expertise is not necessarily directly linked to the outcomes of the participants in their 'normal' roles. In this evaluation design, the researcher may have been seen to hold knowledge which affects job performance and even funding and employment (e.g. a SEAL lead might hold thoughts such as 'if SEAL does not work, it may reflect badly on my performance'). This ultimately affects the researcher-participant relationship, and although this is not necessarily detrimental (e.g. schools are likely eager to be involved in the process in order to receive accurate feedback at the end of the study) there was undoubtedly risk for the researcher in releasing or communicating feedback that may be misinterpreted, ultimately damaging the study and potentially the participants (e.g. on hearing there has been no statistical effect after time 2 data, a Local authority representative reduces financial support for SEAL schools).

Several other ethical issues not unique to evaluative research were present within the current design;

Working with minors - The process of 'assumed consent' is not necessarily valid for adolescents and children as the 'adult' as an authority figure may pressure minors into participating in interview or focus groups against their wishes, whereas an adult is assumed to be able to freely express their desire to withdraw or not participate to

begin with. As consent is only considered valid if it is given with full knowledge and understanding of the purpose and procedures of the intended study, full instructions regarding right to withdraw were included in the questionnaires. During the visits where focus groups with pupils had been arranged, schools were asked to ensure parent and pupil agreement before participating.

Confidentiality – To ensure an ethical study, anonymity of individuals involved must remain for all levels of the study including selected local authorities, schools, staff and pupils. This is secured through a variety of strategies including, anonymised transcription of interviews, unique reference numbers on pupil questionnaires, and secure handling and storage of data.

Right to withdraw – All schools and pupils were able to withdraw from the study at any time without penalty or providing a reason. Withdrawal from the study is noted as attrition, and is discussed in further detail in section 5.2.

In accordance with best practice, the research abided by ethical guidelines from several additional sources, including the 'Code of Ethics and Conduct (British Psychological Society, 2006) and the 'Ethical Guidelines for Educational Research (British Educational Research Association, 2004).

4.11 Chapter summary

The current chapter described the justifications for the methodology on the basis of the previous literature presented in chapters 2 and 3. The current study was designed to assess the impact of the SEAL programme by addressing some of the methodological criticisms that hinder previous designs.

Firstly, the importance of a theoretical rationale, namely pragmatism, was discussed. Adoption of a pragmatic approach was considered an advancement over prior designs, as it allowed the use of mixed methods, in order to avoid forming a 'black box' (Harachi et al., 1999) assessment (in which no indication of the wider context or process of an implementation is given).

Secondly, this was followed by an analysis of the data collection methods utilized by this research, and of the rationale behind using those types of methods. This was particularly important, as several unique issues arose as a result of utilising mixed methods.

Thirdly, specific details were provided in regards to the selection of participants for the study. This was important as selecting an appropriate sample (e.g. sample size, projected rates of attrition, matching appropriate comparisons) is difficult in educational research.

The chapter concluded with an overview of the specific details on data collection methods, with particular attention to psychometric properties of the tools, the relevance of the various socio-demographic factors, and details as to the how the data was collected, validated and analysed (both quantitative and qualitative).

5

5 Results

5.1 Introduction to chapter

The aim of this chapter is to present the main findings of the current study. For reasons of clarity, this is achieved by organising the chapter into several sections.

The first section contains issues regarding data screening, including reported levels of attrition, the nature and distribution of missing data, and the various assumptions and requirements of the multi-level modelling and parametric analysis.

The second section presents the various descriptive statistics for the sample and provides a baseline comparison at Time 1 between the SEAL and matched comparison schools and pupils to establish any pre-existing differences.

In the third section, tables of the MLM analysis and corresponding commentaries are presented in relation to research questions 1-4.

In the final section, findings from the MLM analysis are used to explore the qualitative data from the case study schools, in an attempt to identify any qualitative indicators of impact, as described in research question 5. In reference to the recommendations made in the methodology chapter (see Table 4.1), an effort is made to establish whether the comments of the staff and pupils reflect the quantitative findings and whether any additional insight may be gained into the nature and extent of the impact of the Secondary SEAL programme.

5.2 Data screening

5.2.1 School level attrition

As expected in longitudinal research, there was an inevitable reduction in the number of participating schools over the course of the study, which occurred at three specific stages. Attrition started at the point schools failed to provide data at baseline (i.e. returning their Time 1 data). The second opportunity occurred at the point schools failed to return data at Time 2, and a final opportunity occurred at the point where remaining schools failed to return data at the final collection point at Time 3. For the specific time period at which these occurred see appendix 1. Details of the attrition rate of schools are displayed in Table 5.1.

	Time 1	Time 2	Time 3
Number of Returns	26 SEAL 21 Comp.	25 SEAL 20 Comp.	22 SEAL 19 Comp.
Cumulative number of non-return	0 SEAL 2 Control	1 SEAL 3 Control	4 SEAL 4 Control
This Consists of:			
Cumulative number of Missing pupils	0 SEAL 268 Comp.	180 SEAL 555 Comp.	800 SEAL 742 Comp.
Maximum number of pupils remaining within schools	4534 SEAL 3828 Comp.	4354 SEAL 3541 Comp.	3734 SEAL 3354 Comp.
% non-return	0% SEAL 6.5% Comp.	4% SEAL 13.6% Comp.	17.6% SEAL 18% Comp.

Table 5.1 School level attrition rates

The overall dropout rate for all schools from Time 1 to Time 3 is 17.8%. As a broad indication, the NICE systematic review quality criteria for attrition rates suggests that studies with a rate less than 30% be awarded a 'double plus' standard (Adi, 2007). In this regard, the rate of attrition at the school level is considered very low.

Despite the relatively low dropout rates at school level, the quoted figure is not entirely accurate, as the school level numbers (as show in Table 5.1) indicate the *maximum* number of *pupils* able to return valid data for each point in the study.

In order to accurately report the true attrition rate of the study, drop out rates of pupils *within* schools must also be assessed.

5.2.2 Pupil level attrition

There are a number of reasons why a participating school (whether SEAL or comparison) would return fewer than the maximum number of questionnaires (as indicated by the number of pupils within the cohort of the study) and subsequently reduce the expected sample size.

For instance, the current study used a 'monitoring sample list', which did not allow changes in the sample once the initial number of pupils had been established. To clarify, the monitoring list was a record of every individual pupil (obtained from the NPD) attending a school involved in the study (either SEAL or comparison) in 2007. This list formed the basis of optimum sample, and entries from pupils at Time 1, Time 2 and Time 3 were matched to the list.

Therefore any changes caused by pupils who moved from or left a school at any point after September 2007 were not reflected in the study (i.e. the personalised questionnaires for Times 1, 2 & 3 were not adapted to reflect these changes), and instead represented empty cases in the data. Similarly, pupil absenteeism on the day the questionnaires were issued was reflected in exactly the same way. Additionally, throughout of the course of the study, schools reported incomplete returns from tutor or class groups within individual schools, due to neglect by individual form or class teachers.

Even when a pupil had returned a questionnaire, missing, incomplete or ruined data (e.g. multiple answers for one question) further limited the number of valid responses from a school. In these instances, it was possible for a pupil to provide partial valid data from one questionnaire or domain (e.g. valid ELAI scores, but no SDQ scores).

Due to the varying nature of the responses (e.g. pupils may have been absent for one or two years, but have provided data at one Time point) cumulative percentages are not reported.

Table 5.2 shows the total number of missing and remaining valid cases provided by pupils for the ELAI across the data collection points. A case is considered valid if:

- Provided by a pupil from the monitoring sample list (some schools returned custom questionnaires for new pupils)
- Has a complete score (e.g. no missing values)

On the basis of recommendations made by the inventory's authors, no imputation of missing pupil data for the ELAI was attempted.

	Time 1	Time 2	Time 3
ELAI: Total emotional literacy			
Total Number of potential Pupil returns	4534 SEAL 3828 Comp.	4354 SEAL 3541 Comp.	3734 SEAL 3354 Comp.
Number of missing cases	1309 SEAL 1279 Comp.	1142 SEAL 1215 Comp.	1277 SEAL 1363 Comp.
% of total	28.9% SEAL 33.4% Comp.	26.2% SEAL 34.3% Comp.	34.2% SEAL 40.6% Comp.
Remaining valid cases	3225 SEAL 2549 Comp.	3212 SEAL 2326 Comp.	2457 SEAL 1991 Comp.

Table 5.2 Pupil level attrition rates: ELAI

The overall attrition rate of pupils of the ELAI is 52%.

Return rates of the SDQ are treated slightly differently. Given a far more expansive history of development and normalisation (Goodman, 1997; Goodman, 2001; Goodman et al., 1998), the SDQ is more robust than the ELAI when imputing missing scores. Unlike the ELAI, the SDQ documentation states that domains with less than three missing scores can be imputed on the basis of the mean of the remaining valid responses (www.sdqinfo.org).

Table 5.3 and Table 5.4 show the valid return rates after imputation for the domains of total difficulties and pro social behaviour.

A case is considered valid if:

- Provided by a pupil from the monitoring sample list (some schools returned custom questionnaires for new pupils)
- Has a complete score (e.g. no missing values)
- Has been imputed for a domain with a confirmed factor

	Time 1	Time 2	Time 3
SDQ: Total difficulties			
Total Number of potential Pupil returns	4534 SEAL 3828 Comp.	4354 SEAL 3541 Comp.	3734 SEAL 3354 Comp.
Number of missing cases	680 SEAL 764 Comp.	553 SEAL 794 Comp.	856 SEAL 1099 Comp.
% of total	15% SEAL 20% Comp.	12.7% SEAL 22.4% Comp.	22.9% SEAL 32.8% Comp.
Remaining valid cases	3854 SEAL 3064 Comp.	3801 SEAL 2747 Comp.	2878 SEAL 2255 Comp.

Table 5.3 Pupil level attrition rates: total difficulties

The overall attrition rate for total difficulties is 44.6%.

	Time 1	Time 2	Time 3
SDQ: Pro social behaviour			
Total Number of potential Pupil returns	4534 SEAL 3828 Comp.	4354 SEAL 3541 Comp.	3734 SEAL 3354 Comp.
Number of missing cases	672 SEAL 759 Comp.	541 SEAL 775 Comp.	839 SEAL 1078 Comp.
% of total	14.8% SEAL 19.85 Comp.	12.4% SEAL 21.9% Comp.	22.5% SEAL 32.1% Comp.
Remaining valid cases	3862 SEAL 3069 Comp.	3813 SEAL 2766 Comp.	2895 SEAL 2276 Comp.

Table 5.4 Pupil level attrition rates: pro social behaviour

The overall attrition rate for pro social behaviour is 44.2%.

One final reduction in the data is caused by ensuring valid cases at both Time 1 and 3, in order to provide matched comparisons in pupil's scores from baseline to post-test.

5.2.3 Characteristics of final sample

Inventory	Remaining Cases (Valid scores in both Time 1 and Time 3)
Number of Schools	22 SEAL 19 Comparison
ELAI: Total emotional literacy	1802 SEAL 1504 Comparison
SDQ: total difficulties	2455 SEAL 2004 Comparison
SDQ: Pro social Behaviour	2477 SEAL 2029 Comparison

Table 5.5 Final pupil level sample

Descriptives of the final sample are provided in Table 5.6, Table 5.7 and Table 4.4

The following section discusses the potential ramifications of the high levels of the reported attrition rates.

5.3 Missing data analysis

A number of reviews (Roth, 1994; Wilkinson, 1999) conducted into how missing data is treated indicates that historically, researchers pay little consideration to the missing data within their datasets, beyond choosing to either discard entire cases (e.g. pupils) from their research, or removing incomplete cases on an analysis by analysis basis. This pattern of list-wise (deleting an entire case) or pair-wise (the removal of any variable with missing data involved in the analysis) deletion, is particularly common within education and psychology journals, and it is suggested that up to 50% of researchers engage in this practise when reporting their results (Peugh & Enders, 2004).

Whereas these approaches may ultimately be the most favourable or only solution for dealing with missing values, intuitively these process seems premature without first considering the potential reasons why data were missing in the first place. For instance, it is entirely possible that individuals with complete data may differ in some respect from those with missing values (e.g. students with reading difficulties or other SEN are unable to complete one particular section of the questionnaire, or children with poor peer relations are unhappy completing questions asking about the quality

of their friendships). The ramifications of ignoring such underlying patterns are severe, and included reduction in the construct validity of tools (as sub-populations are inadvertently ignored), creation of an unrepresentative dataset, limiting generalisability of findings (Twisk & Vente, 2002) and uneven groups for comparison, increasing the potential for type I and type II errors (Mcknight, Mcknight, Sidani, & Figueredo, 2007).

On this basis, to ignore or remove missing cases without consideration of preliminary analysis seems insufficient. These concerns have been expressed by the American Psychological Association who state that removal of data without prior consideration is, "*Among the worst methods available for practical applications*" (1999, p. 598). Despite this warning, a lack of sufficient attention to missing data continues to appear in the published literature (Peugh & Enders, 2004). As recent developments in analysis software (e.g. Missing Value Analysis in SPSS 16) makes it increasingly easy to analyse data in relation to missing values, there are fewer reasons not to attend to this arguably underrated area of preliminary data screening.

Given the reported attrition rates in section 5.2, it is important to address the above concerns by first assessing whether there is any discernable pattern to the aforementioned missing values. In the context of the current study, there are two main sources of missing data:

- Non return of entire school data
- Non return of pupil data within a school (either complete or partial)

Missing schools

There is no option but to exclude schools who fail to return questionnaires on a pairwise basis. However, this approach is only valid if the attrition of the missing schools is considered to have occurred completely at random. If there is a pattern to the school dropout rate (e.g. significantly more SEAL schools have dropped out because they are no longer implementing SEAL) then there are serious questions in regards to the representativeness of the final sample. For SEAL schools, the attrition rate from Time 1 to Time 3 was 17.6%. For comparison schools, the attrition rate was 18% (see Table 5.1). On this basis, we can be confident that school level attrition is

equally distributed amongst SEAL and comparison schools and that the school level sample has remained valid despite levels of attrition.

Non return of pupil data within a school (either complete or partial)

It is possible that the high level of missing pupil data is as a result of a large percentage of pupils across the entire sample refusing to answer a particular question or questions (e.g. there is particular item that is inappropriate or vulnerable to producing invalid responses). Alternatively, it is also possible that there is a particular demographic or group that is associated with producing incomplete answers. For instance, children with SEN may have had difficulty in reading or responding to particular items. Alternatively, pupils with particularly low levels of pro social behaviour may have refused to answer questions asking about friendships. The presence of such scenarios has serious implications, and it is important to identify the presence of any such confounds.

In relation to the first scenario, Little's (1988) 'Missing Completely at Random' (MCAR) test shows that missing values are equally distributed throughout each question and equally across the three Time periods. (χ^2 (10636) = 10734.848, $p = 0.248$).

Further analysis was conducted to examine any potential relationship between socio-demographic factors and missing values. Tabulated pattern analysis shows that fewer than 1% of missing cases for either total emotional literacy, total difficulties and pro-social behaviour could be attributed to any of the following factors: Aggregated SEN, attainment, size, SEAL status, LEA, gender, ethnicity, SEN provision status, FSM.

Therefore, missing cases were found to be missing completely at random as:

- There is no discernable pattern to missing questions
- There is no discernable pattern to missing pupils in relation to schools
- There is no discernable pattern in relation to measured variables

The descriptives of the final outcome variables are shown in Table 5.6, Table 5.7 and Table 5.8.

ELAI: Total emotional literacy						
	Time 1			Time 3		
	SEAL	Comparison	Total Sample	SEAL	Comparison	Total Sample
n Number of pupils	3225	2549	5774	2457	1991	4448
\bar{x} Average score	73.72	74.06	73.36	73.10	72.59	72.87
s.d. Standard deviation	8.64	8.59	8.79	8.27	8.14	8.22
α Reliability of measure	0.744	0.750	0.746	0.763	0.747	0.756

Table 5.6 Descriptives of final sample: emotional literacy

SDQ: Total difficulties						
	Time 1			Time 3		
	SEAL	Comparison	Total Sample	SEAL	Comparison	Total Sample
n Number of pupils	3854	3064	6918	2878	2255	5133
\bar{x} Average score	12.41	12.41	12.41	11.51	12.06	11.76
s.d. Standard deviation	6.00	5.93	5.97	5.87	5.69	5.79
α Reliability of measure	0.789	0.787	0.788	0.805	0.787	0.798

Table 5.7 Descriptives of final sample: total difficulties

SDQ: Pro social Behaviour		
	Time 1	Time 3

	SEAL	Comparison	Total Sample	SEAL	Comparison	Total Sample
n Number of pupils	3862	3069	6931	2895	2276	5171
\bar{x} Average score	7.55	7.50	7.53	7.14	7.15	7.15
s.d. Standard deviation	1.86	1.91	1.88	2.03	1.86	1.96
α Reliability of measure	0.665	0.703	0.683	0.732	0.672	0.708

Table 5.8 Descriptives of final sample: pro social behaviour

In reference to the above tables, the large pupil level reduction in sample size from Time 1 to time 3 is evident. For each of the three domains, the mean pupil scores are considered within the average range when compared to the tool's previous literature or manuals (see Table 4.5)

Also of note are the extremely small changes in mean scores from Time 1 to Time 3 for each of the three inventories, especially for pro social behaviour, which remain virtually identical (Table 5.8). It is for this reason that all subsequent analysis excludes Time 2 data, as there is little to be gained in examining interim scores, when baseline is so closely matched with the final data collection point.

5.3.1 Data requirements & assumptions

Consistent with previous statements regarding the desire for a high level of rigour in the analysis, initial data screening prior to any inferential analysis is a necessary part of ensuring accurate and valid results. For the use of any inferential analyses, there are certain expectations in regards to pre-existing patterns and structure of the data. For MLM, these assumptions are broadly similar to those of multiple regression. Although moderate violations of assumptions have long been seen to have little substantive effect on analysis (Cohen, 1988), especially with larger sample sizes, this form of data screening is still necessary, especially when results may be inferred to a wider population. This is because the consequences of ignoring large scale violations can have a serious impact upon the representativeness of the results (Field, 2009).

A summary of assumptions for all forms of analyses used in the current study is provided in Table 5.9

Requirement	Value	Comment
Categorical or continuous variable types ✓	See Table 4.6	All variables are either categorical or continuous. No observable floor or ceiling effect
Non zero variance in all predictors ✓	See Table 4.4	All continuous predictor variables listed Table 4.4 shown non zero variance
No perfect multi-collinearity ✓	Tolerance (1/TIF) 0.394-0.989	Variance Inflation factor are within acceptable range (Menard, 1995; Myers, 1990)
Homoscedasticity – residuals at each level of predictor should have same variance. ✓	$F = (41,3264) = .97$	Levene's test indicates that variances across school level were equal for the various analyses (Field, 2009).
Independent errors ✓	$d = 1.955$	Durbin Watson indicates that errors are independent (Field, 2009)
Normally distributed errors ✓	See appendix 5	Residual plots indicate normally distributed errors
Linearity ✓	See appendix 5	Expected vs. Observed values plotted indicate a linear trend to the data
Additional MANOVA Requirement		
Multivariate normality X	$W = 0.288 - 0.980, p < 0.01$	Shapiro-Wilks show that this particular assumption is violated for individual variables. However, as the assumption of group variances are considered equal (see fourth requirement - Homoscedasticity), it is acceptable to report this statistic (Field, 2009)

Table 5.9 Requirements of analysis

The results from Table 5.9 show that aside from some issues regarding multivariate normality (which is only used in establishing baseline comparisons, and is not a requirement for MLM), the data are acceptable for MLM analysis.

5.3.2 Baseline comparison

Table 4.4 shows the various descriptives used to originally identify matched comparison schools (see 4.5.4 section) and are subsequently used in the MLM analysis.

It is important to establish any significant differences between SEAL and comparison groups at baseline that may alter the interpretation of the final analysis. This can be achieved by examining the amount of variance between SEAL and comparison schools in relation to the various factors listed in Table 4.4.

School level variables

'Multiple Analysis of Variance' (MANOVA) indicated that overall, school level variables are not significantly different between the SEAL and comparison groups) $F(5, 36) = 1.02$ ($p = 0.4$). In line with the pragmatic approach adopted for this study (see section 4.4), it is also appropriate to ask what is significantly meaningful, (i.e. what makes sense? what is useful?), rather than what is statistically significant? It is in this regard, 'Univariate Analysis of Variance' (ANOVA) and corresponding effect size analysis shows the magnitude the identified difference for each of the dependent variables. The results are shown in Table 5.10

Dependent Variable	df (SEAL) df (error)	F value	p	Partial Eta ²
FSM Eligibility	1 35	1406	.243	0.034
Aggregate SEN	1 35	.998	.324	0.024
Attainment	1 35	.196	.660	0.005
Unauthorised Absence	1 35	1.164	.287	0.028
Size	1 35	.827	.368	0.020

Table 5.10 School level Analysis of Variance

As can be seen in Table 5.10, consistent with a non-significant effect, the partial Eta² values are extremely small (the cut-off for citing a 'small' effect size are derived from a variety of sources: Cohen, 1992; Keppel & Wickens, 2004; Pallant, 2007, Sten & Eillis, 2009). Eta squared is selected as measure

of effect on the recommendation of Field, (2009) who notes that issues of estimation towards an unknown population are only relevant if the effect size is to be inferred. As table 5.10 indicates the magnitude of difference between known groups, even with inflation the actual effect is still very small. In relation to the difference between η^2 and partial η^2 , it should be noted that for a one-way ANOVA, partial η^2 and η^2 values are identical (Pierce, Block & Aguinis, 2004).

Therefore there is a minimum of meaningful difference in school level variables between SEAL and comparison schools.

Pupil level variables

As all pupil level predictor variables are categorical, a χ^2 analysis was used to assess the baseline comparisons between SEAL and matched comparison schools.

Dependent Variable	df	χ^2 value	p	Difference in SEAL compared to comp.
Ethnicity	19	47.67	<0.001	-5.4% White British
SEN Provision Status	3	10.292	0.02	+2% No SEN
				-4.1% School action
				+0.9% School action plus
				+0.8% Statement
FSM	1	1.574	0.22	-1.9% Eligible
Gender	1	.301	0.60	+.3% Female

Table 5.11 Chi square and % difference of pupil level variables

Although ethnicity and SEN provision status indicate an overall difference between SEAL and comparison groups, the percentage difference between the main groups of these variables indicates the meaningful difference is very small. Interpretation of these results suggest that the level of significance is due to the very small numbers within ethnic minority and SEN groups, rather than as a result of meaningful differences between pupils in SEAL and comparison schools. The prohibitively small sizes of these groups are also worth noting when evaluating the results of the MLM analyses.

In regards to the results shown in Table 5.10 and Table 5.11, there are no meaningful differences between SEAL and comparison schools or pupils at baseline. Therefore, any identifiable differences or changes between the two groups are considered to have occurred subsequent to Time 1 data collection.

5.4 Inferential statistics

5.4.1 Interpretation of the inferential statistics

Multi-Level models are typically built up in a series of stages (Raudenbush & Bryk, 2002; Twisk, 2006). This allows for an increasing number of parameters to be compared with the overall fit of the basic or 'empty' model. In this way, single predictors of interest (e.g. whether a school is implementing SEAL or not) can be tested to see whether they significantly improve upon the existing background variables.

The empty (also known as null or basic) model shows only the amount of unexplained variance at each level of the model, which is known as the inter-cluster coefficient (ICC). This is indicated by the percentage shown next to the co-efficient. The level of significance of the ICC is also given.

The background model is used to show to what extent variance identified by the empty model is explained by the various demographics shown in Table 4.6. This model is important as it allows for sources of variance at the various levels to be identified and explained prior to the inclusion of the variable of interest (SEAL status).

The full model is identical to the background model, with the single addition of one school level variable; SEAL status. The SEAL variable indicates whether the school has been implementing the SEAL programme from Time 1 or alternatively is identified as a matched comparison school. The addition of a single variable of interest allows the significance of SEAL as a school level predictor to be examined after all other variables have been taken into account. The full model also allows SEAL to be examined in relation to the background model to see whether SEAL creates a more accurate or 'better fitting' model overall. The overall model fit is shown at the bottom of each table, using the -2loglikelihood as an estimate for model fit, consistent with advice of several MLM authors (Kreft & De Leeuw, 2007; Twisk, 2006)

5.4.2 How to read the multi-level tables

β_{0ijk} - shown in the title columns for the various stages of model (empty, background, full). This value indicates the overall average score and standard deviation (denoted by the brackets) for an average pupil (i), within an average school(j), in an average LA (k) before any of the predictor variables have been assigned. It is possible to calculate a specific score for a specific individual, by using this 'baseline' figure and adding each relevant co-efficient shown in the table.

Co-efficient β – This column represents the amount of variance attributable to each of the predictor variables entered into the model. For all the variables contained in the analysis, these can be interpreted as 'raw scores', as the predictors have been entered as non-centred. This has the advantage of being able to display the actual scores from the dependent variable (emotional literacy, total difficulties, pro social behaviour) (Kreft & De Leeuw, 2007). Therefore this value can be read as the change in the value of the dependent variable as result of co-efficient. For the variance attributed to each level in the model (LA Level, School Level, and Pupil Level), otherwise known as the ICC, the percentage of the total attributable variance is also shown. In this way, it is possible to say how much of the total variance identified is attributable to a particular level. For a more detailed description for what each predictor measures, see Table 4.6

Standard error – The standard error represents the average amount the mean value of the co-efficient varies between schools or pupils within the entire dataset. This value is used to represent the average amount the co-efficient is likely to vary around the mean. This is useful when compared to its corresponding co-efficient as a small standard error compared to the co-efficient is likely to indicate a significant predictor, and it is on this basis that the significance of individual predictors is calculated.

p – This value represents the significance of the co-efficient within the overall model. It is calculated by comparing the z statistic (coefficient divided by the standard error) with the appropriate degrees of freedom. For issues of clarity, the degrees of freedom are not shown in the main tables, and are instead included in appendix 6. In line with the pragmatic paradigm described in section 4.3, the actual values are reported in order to detect any marginal non-significant trend (e.g. a value close to,

but higher than or equal to 0.05), as the arguably over-simplistic dichotomy between $< / > 0.05$ is rejected in favour of a more meaningful analysis (Wright, 2003).

*-2*log likelihood* – This value is a measure of the overall fit of the model, when comparing the observed data with its expected values and is akin to the sum of squares statistic when calculating a single level regression. Large log likelihood values indicate a significant deviation from expected values, which is interpreted as poor fitting model, with large amounts of unexplained variance, and non-significant predictor variables. This value used to provide an overall model fit, which can then be compared to a model with more predictor variables included.

χ^2 - This is a standard chi-square test. It is used to assess the differences between two models (either empty vs. background or background vs. full) to establish whether there has been any significant change. If only one predictor is different between the two models (e.g. school SEAL status), then this test indicates whether the model is significantly better fit to the data when including this variable.

5.5 Research Question 1 – Emotional literacy

What is the impact of the Secondary SEAL Programme on pupils' emotional literacy?

Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

Empty Model ($\beta_{0ijk} = 72.961 (0.252)$)				Background Model ($\beta_{0ijk} = 31.391 (2.174)$)				Full Model ($\beta_{0ijk} = 31.257 (2.113)$)			
	Co-efficient β	Std. error	p		Co-efficient β	Std. error	p		Co-efficient β	Std. error	p
<u>LA Level</u>	0.233 0.4%	0.555	0.34	<u>LA Level</u>	0.00 0%	0.00	-	<u>LA Level</u>	0.00 0%	0.00	-
				LA Attainment	0.013	0.030	0.33	LA Attainment	0.017	0.029	0.28
<u>School Level</u>	1.260 1.9%	0.688	0.04	<u>School Level</u>	0.425 0.92%	0.221	0.03	<u>School Level</u>	0.349 0.76%	0.205	0.04
				FSM Eligibility	0.054	0.022	<.01	FSM Eligibility	0.049	0.022	0.02
<u>Pupil Level</u>	64.932 97.7%	1.607	0.00	Aggregate SEN	0.011	0.017	0.26	Aggregate SEN	0.011	0.016	0.25
				Attainment	0.033	0.015	0.02	Attainment	0.031	0.014	0.01
				Unauth. absence	0.132	0.112	0.12	Unauth. absence	0.152	0.108	0.08
				Size	0.00	0.001	-	Size	0.00	0.001	-
								SEAL	0.494	0.327	0.07
				<u>Pupil Level</u>	45.711 99.08%	1.131	<.01	<u>Pupil Level</u>	45.725 99.24%	1.131	<.01
				Gender (if Male)	0.765	0.249	<.01	Gender (if Male)	0.770	0.249	<.01
				Ethnicity (if p < 0.05)	African 2.319	1.059	0.02	Ethnicity (if p < 0.05)	African 2.296	1.056	0.02
					Other 3.239	1.177	<.01			Other 3.224	1.174
				FSM (if eligible)	-0.065	0.393	0.4	FSM (if eligible)	-0.056	0.393	0.4
				School action	0.407	0.405	0.15	School action	0.425	0.405	0.15
				School action plus	-1.232	0.647	0.02	School action plus	-1.256	0.647	0.02
				Statement	-0.299	1.085	0.39	Statement	-0.316	1.085	0.39
				ELAI Score Time 1	0.510	0.014	<.01	ELAI Score Time 1	0.511	0.014	<.01
-2*log likelihood = 2322.499				-2*log likelihood = 22040.991				-2*log likelihood = 22038.850			
$\chi^2 (30, n = 3306) = 1095.26, p < 0.001$						$\chi^2 (1, n = 3306) = 2.141, p = 0.14$					

Table 5.12 Results of MLM Analysis – Total emotional literacy (ELAI) at Time 3

Distribution of variance across LA, school and pupil level

The results shown in Table 5.12 show that the influence of the Local Authority in impacting pupil's emotional literacy is virtually non-existent, even when no explanatory variables are taken into account ($\text{var}(v_{0k}) = .233, p=.34$). Therefore comments in regards to the role of the LA are excluded from further analysis.

The multi-level analysis indicates a consistent school level effect in each of three models, ($\text{var}(\mu_{0j}) = .349, p=.04$), showing that school has a significant impact on pupil's emotional literacy. However, the ICC indicates that overall, school level variance accounts for less than 1% of all variance attributed to Time 3 Total emotional literacy scores. This means virtually all variance (99.24%) attributable to variations in Time 3 self-rated emotional literacy scores reside at the pupil level ($\text{var}(\mu_{0ij}) = 45.725, p <.01$).

What is the impact of the Secondary SEAL Programme on Pupils' social and emotional skills?

The relationship between Time 3 total emotional literacy and school SEAL status (SEAL/ Comparison) showed a marginal non-significant trend across schools, ($\beta_{0j} = 0.494, p = .07$). In other words, pupil's social and emotional skills are not significantly improved by attending a school implementing SEAL. This is consistent with the reported -2*log likelihood value ($\chi^2(1, 3306) = 2.141, p = .14$) which indicates that overall, the background model is not significantly improved by the inclusion of SEAL as a school level variable.

In terms of magnitude, the reported co-efficient (β) indicates to what extent an average pupil from an average school is expected to increase their Time 3 total emotional literacy score on the basis of belonging to a SEAL school. This statistic indicates a change of .494, which translates as a rise of approximately one half of a point of self-rated emotional literacy. This is indicative of an extremely small effect.

Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

School level predictors

In regards to particular school level predictors, a significant effect was found for FSM eligibility ($\beta_{0j} = .049$, $p = .02$) and attainment ($\beta_{0j} = .031$, $p = .01$). These co-efficients indicate that for every 1% increase in free school meal eligibility or 1% rise in school level attainment, self-rated emotional literacy rises by .049 and .031 of a point in Time 3 total emotional literacy score respectively. This indicates there is a significant, but extremely small relationship between emotional literacy and both academic ability and social economic status of the school. It is, however, worth noting that these variables account for a maximum of 1% of the total variance.

There was no indication of a significant relationship between total emotional literacy and aggregate SEN ($\beta_{0j} = .011$, $p = .25$), unauthorised absence ($\beta_{0j} = .152$, $p = .08$), or size of school, which showed no reportable variation at all.

Pupil level predictors

For pupil level predictors, there was a significant effect of gender ($\beta_{0ij} = .770$, $p < .01$), indicating that male pupils are more likely to report higher levels of emotional literacy. Significant effects were also found for some ethnic groups, namely African ($\beta_{0ij} = .2296$, $p = .002$), or Other ($\beta_{0ij} = .3224$, $p < .01$), although the low number of pupils belonging to these groups should be noted before interpreting this particular finding as a minimum of 67 pupils would be required to accurately detect a significant effect (Cohen, 1992).

In regards to SEN provision status, a significant relationship was found between Time 3 total emotional literacy and receiving SEN provision at school action plus ($\beta_{0ij} = -1.256$, $p = 0.02$), but there was no similar relationship between emotional literacy and the level school action ($\beta_{0ij} = 0.425$, $p = 0.15$) or for pupils receiving provision at statement level ($\beta_{0ij} = -0.316$, $p = 0.39$). However, as noted with the reported significance for ethnicity, the sample sizes for the categories of SEN provision fall below the requirements for the same levels of rigour used for the overall model (see appendix 3).

No significant relationship was found between a pupil's eligibility for free school meals and their Time 3 emotional literacy score eligibility ($\beta_{0ij} = -0.056$, $p=0.4$).

Finally, a strong relationship was shown between Time 1 and Time 3 emotional literacy scores ($\beta_{0ij} = 0.511$, $p < 0.01$). This indicates that baseline emotional literacy is an extremely strong predictor for future results, but also indicates a small element of change between Time 1 and Time 3 scores.

Summary statements

- There is virtually no variance attributable at the Local Authority Level
- The total amount of variance explained at the school level is less than 1%
- Within the 1% of explained variance at school level, FSM and attainment are significant predictors
- Pupil's social and emotional skills are not significantly improved by attending a school implementing SEAL ($\beta_{0j} = .494$, $p = .07$).
- The two strongest predictors of Time 3 Total emotional literacy scores are Time 1 emotional literacy scores and gender
- Being identified as male is associated with a .7 rise in self-rated emotional literacy scores. For every point of Time 1 emotional literacy score, Time 3 emotional literacy is expected to rise half a point
- There is no significant relationship between emotional literacy and free school meal eligibility, or SEN (unless the pupil is receiving provision at school action plus)

5.6 Research Question 2 – Mental health difficulties

What is the impact of the secondary SEAL programme on pupils' mental health difficulties?

Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

Empty Model ($\beta_{0ijk} = 11.900 (0.196)$)				Background Model ($\beta_{0ijk} = 7.730 (1.1.362)$)				Full Model ($\beta_{0ijk} = 7.799 (1.312)$)			
	Co-efficient β	Std error	p		Co-efficient β	Std. error	p		Co-efficient β	Stand. error	p
<u>LA Level</u>	0.424 1.26%	0.307	0.09	<u>LA Level</u>	0.007 0.03%	0.023	0.38	<u>LA Level</u>	0.213 0.94%	0.100	0.42
				LA Attainment	-0.029	0.015	0.04	LA Attainment	0.09	0.022	<.01
<u>School Level</u>	0.484 1.44%	0.271	0.04	<u>School Level</u>	0.00 0.00%	0.00	-	<u>School Level</u>	0.00 0.00%	0.00	-
				FSM Eligibility	-0.029	0.015	0.03	FSM Eligibility	-0.025	0.014	0.04
<u>Pupil Level</u>	32.645 97.3%	0.695	<.01	Aggregate SEN	-0.008	0.011	0.23	Aggregate SEN	-0.009	0.011	0.20
				Attainment	-0.013	0.009	0.08	Attainment	-0.013	0.009	0.08
				Unauth. absence	0.055	0.092	0.28	Unauth. absence	0.038	0.089	0.34
				Size	-0.001	0.00	-	Size	0.001	0.00	-
								SEAL	-0.298	0.178	0.05
				<u>Pupil Level</u>	22.536 99.97%	0.479	<.01	<u>Pupil Level</u>	22.535 99.06%	0.479	<.01
				Gender (if Male)	-0.659	0.151	<.01	Gender (if Male)	-0.653	0.150	<.01
				FSM (if eligible)	0.733	0.227	<.01	FSM (if eligible)	0.730	0.227	<.01
				School action	0.413	0.236	0.04	School action	0.401	0.236	0.04
				School action plus	1.816	0.377	<.01	School action plus	1.841	0.377	<.01
				Statement	0.741	0.567	0.10	Statement	0.763	0.567	0.09
				Total Diff. Score Time 1	0.518	0.012	<.01	Total Diff. Score Time 1	0.518	0.012	<.01
				Ethnicity (if p < .05)	African -1.165	0.610	0.28	Ethnicity (if p < .05)	African -1.177	0.608	0.03
			Pkistani -1.716		0.463	<.01	Pkistani -1.735		0.462	<.01	
			Indian -1.537		0.729	0.02	Indian -1.521		0.728	0.02	
			Bngldshi -2.503		0.928	<.01	Bngldsh -2.526		0.926	<.01	
			Trveller 11.075		4.756	<.01	Trveller 11.175		4.756	0.01	
			Romany -8.852		4.771	0.03	Romany -8.757		4.770	0.03	
			Other 10.225		4.771	0.02	Other -10.389		4.772	0.01	
-2*log likelihood = 28250.304					-2*log likelihood = 26570.272				-2*log likelihood = 26567.621		
$\chi^2 (30, n = 4459) = 1680.032$ p < 0.01				$\chi^2 (1, n = 4459) = 2.653$ p = 0.10							

Table 5.13 Results of MLM Analysis - Total difficulties (SDQ) at Time 3

Distribution of variance across LA, school and pupil level

The most salient feature of the analysis shown in Table 5.13 is that 99.06% of the variance attributable to Time 3 total difficulties scores is exclusively at the pupil level ($\text{var}(\mu_{0j}) = 22.535$, $p < 0.01$), and accordingly, remaining school level variance is too small to register in the full model after the predictor variables have been entered.

What is the impact of the Secondary SEAL Programme on Pupils' mental health difficulties?

Time 3 total difficulties and school SEAL status (SEAL / Comparison) showed a marginally non-significant variance across schools ($\beta_{0j} = -0.298$ $p = 0.05$). However, the inclusion of SEAL in the full model did not significantly increase its predictive power ($\chi^2(1, n = 3306) = 2.653$, $p = 0.10$). This is consistent with the low overall variance attributable to the school level.

In regards to magnitude, an average pupil within an average SEAL school would be expected to reduce their Time 3 total difficulties score by .0298 of a point, which indicates an extremely small effect.

Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

School level variables

Percentage of pupils eligible for free school meals is the only predictor that is considered significant at the school level ($\beta_{0j} = -0.025$, $p = 0.04$). However, the statistically small size of the co-efficient makes interpretation of this statistic virtually meaningless.

No other school level variable is considered significant. This includes aggregate SEN ($\beta_{0j} = -0.009$, $p = 0.20$), attainment ($\beta_{0j} = -0.013$, $p = 0.08$), unauthorised absence ($\beta_{0j} = 0.038$, $p = 0.34$) and size, which contributes no variance. The magnitudes of the predictors show their contribution to the model to be incidental.

Pupil level variables

Within the 99.06% of variance attributable to the pupil level, almost all predictors indicate a significant relationship with Time 3 total difficulties score. There is a significant relationship between Time 3 total difficulties score and gender ($\beta_{0ij} = -.653$ $p < 0.01$), indicating a reduction in mental health scores if male. However the meaningful impact of this change reflects less than one full point of the Time 3 total difficulties score. Similar, eligibility for FSM ($\beta_{0ij} = 0.730$ $p < 0.01$) indicates a significant but small rise (e.g. less than 1 full point) in mental health difficulties.

Analyses of ethnicity produced significant results, specifically, African ($\beta_{0ij} = 1.177$ $p < 0.03$), Pakistani ($\beta_{0ij} = -1.735$, $p < 0.01$), Indian ($\beta_{0ij} = -1.521$, $p = 0.02$), Bangladeshi ($\beta_{0ij} = -2.526$, $p < 0.01$), Traveller ($\beta_{0ij} = 11.175$ $p = 0.01$), Romany ($\beta_{0ij} = -8.757$, $p < 0.03$) and Other ($\beta_{0ij} = 10.389$, $p = 0.01$). All these ethnicities showed a more meaningful relationship with Time 3 total difficulties scores compared to gender or FSM eligibility. However, as with the Time 3 emotional literacy analysis, there are a correspondingly small number of pupils within each subgroup, which prevents the findings being accurately compared with a larger population.

Some categories of SEN provision status showed similar levels of magnitude. Being identified as school action was identified as significant ($\beta_{0ij} = 0.401$, $p = 0.04$) whereas statement is considered marginally non significant ($\beta_{0ij} = 0.763$, $p = 0.09$). However the most significant finding was the category of school action plus provision ($\beta_{0ij} = 1.841$, $p < 0.01$) which indicates almost a 2 point rise in total difficulties score when identified at receiving provision at school action plus level.

Another significant predictor of Time 3 total difficulties score was the responses recorded at time 1 ($\beta_{0ij} = 0.518$, $p < 0.01$). The coefficient indicates that for every point in score in Time 1, Time 3 scores are increased by approximately half a point.

Summary statements

- Variance is almost exclusively confined to the pupil level (99.06 %)
- There is no significant relationship between Time 3 total difficulties scores and any school level variable
- Although there is a marginal non-significant relationship between Time 3 total difficulties scores and SEAL status, the magnitude of the relationship is extremely small, as being identified as a SEAL school is associated with a 0.298 reduction in self-rated mental health difficulties at the pupil level
- Being identified as a pupil receiving special educational needs provision is associated with a rise of between .04 and 1.8 points in Time 3 total difficulties score
- The strongest predictor is Time 1 total difficulties scores. For every point in score in Time 1, Time 3 scores are increased by approximately half a point

5.7 Research Question 3 – Pro social behaviour

What is the impact of the secondary SEAL programme on pupils' pro social behaviour?

Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

Empty Model ($\beta_{0ijk} = 7.090 (0.084)$)				Background Model ($\beta_{0ijk} = 3.855 (0.407)$)				Full Model ($\beta_{0ijk} = 3.874 (0.408)$)			
	Co-efficient β	Std. error	p		Co-efficient β	Std. error	p		Co-efficient β	Std. error	p
<u>LA Level</u>	0.082 2.14%	0.056	0.07	<u>LA Level</u>	0.00 (0%)	0.00	-	<u>LA Level</u>	0.00 (0%)	0.00	-
				LA Attainment	0.011	0.006	0.04	LA Attainment	0.011	0.006	0.04
<u>School Level</u>	0.106 2.77%	0.048	0.01	<u>School Level</u>	0.017 (0.62%)	0.009	0.03	<u>School Level</u>	0.017 (0.62%)	0.009	0.03
				FSM Eligibility	0.006	0.005	0.12	FSM Eligibility	0.007	0.005	0.09
<u>Pupil Level</u>	3.645 95.09%	0.077	<.01	Aggregate SEN	-0.002	0.003	0.26	Aggregate SEN	-0.003	0.003	0.16
				Attainment	0.007	0.003	0.38	Attainment	0.007	0.003	0.01
				Unauthorised absence	0.007	0.023	0.38	Unauthorised absence	0.005	0.023	0.41
				Size	0.00	0.00	-	Size	0.00	0.00	-
								SEAL	-0.047	0.069	0.25
				<u>Pupil Level</u>	2.738 (99.38%)	0.058	<.01	<u>Pupil Level</u>	2.738 (99.38%)	0.058	<.01
				Gender (if Male)	-0.823	0.055	<.01	Gender (if Male)	-0.823	0.054	<.01
				FSM (if eligible)	-0.103	0.078	0.03	FSM (if eligible)	-0.103	0.078	0.09
				School action	-0.057	0.081	0.2	School action	-0.059	0.081	0.23
				School action plus	-0.270	0.130	0.02	School action plus	-0.267	0.130	0.02
				Statement	-0.296	0.197	0.07	Statement	-0.292	0.197	0.07
				pro social score Time 1	0.407	0.014	<.01	pro social score Time 1	0.407	0.014	<.01
				Ethnicity (if p < 0.05)	African 0.429	0.209	0.02	Ethnicity (if p < 0.05)	African 0.430	0.203	0.02
			Indian 0.555		0.252	0.01	Indian 0.559		0.252	0.01	
			WB/Afrc -1.349		0.527	<.01	WB/Afrc -1.346		0.527	<.01	
			Other 0.959		0.245	<.01	Other 0.960		0.245	<.01	
-2*log likelihood = 18688.909				-2*log likelihood = 17347.070				-2*log likelihood = 17346.618			
$\chi^2 (30, n = 4506) = 1341.839$ p < 0.01						$\chi^2 (1, n = 4506) = 0.452$, p = 0.51					

Table 5.14 Results of MLM Analysis - Pro social Behaviour (SDQ) at Time 3

Distribution of variance across LA, school and pupil level

Table 5.14 indicates that, consistent with the previous analyses, explained variance is overwhelmingly confined to the pupil level (99.38%). Accordingly, there is no identifiable relationship between Time 3 pro social behaviour scores and local authority or school level variance.

What is the impact of the Secondary SEAL Programme on Pupils' pro social behaviours?

In regards to the impact of the SEAL programme, there is no discernable relationship between SEAL status and a change in Time 3 pro social behaviour scores. Of all of the three models (emotional literacy, total difficulties, and pro social behaviour) school SEAL status (SEAL / comparison) is the weakest predictor for pro social behaviour. This is indicated by the small change in $-2 \times \log$ likelihood values between the background and full model, (χ^2 (1, n = 4506) = 0.452 p = .51) showing the predictive validity of full model is not significantly improved by the inclusion of school SEAL status as a variable.

Although the results shown in Table 5.14 suggest that belonging to a SEAL school actually reduces pro social behaviour ($\beta_{0j} = -0.047$), the standard error and size of the coefficient mean this finding is likely to be an anomalous result.

Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

School level variables

As mentioned, the lack of variance attributable at the school level means that all school level variables; aggregate SEN ($\beta_{0j} = -0.003$, $p=0.16$), Attainment ($\beta_{0j} = -0.007$, $p=0.01$), unauthorised absence ($\beta_{0j} = -0.005$, $p=0.41$) and size showed no meaningful (although attainment is significant) relationship to pupils self-rated pro social behaviour scores at Time 3.

Pupil level variables

In regards to the pupil level variance the overall picture is very similar for the results reported in Table 5.12 (total difficulties). Significant predictors included gender ($\beta_{0ij} = -0.823$, $p < 0.01$), which indicated that being male corresponds with a -.823 reduction in pro social behaviour score. Results shown for free school meal eligibility status ($\beta_{0ij} = -0.103$, $p = 0.09$), indicate that being eligible for free school means corresponds with a -.103 reduction in Time 3 pro social behaviour scores. A word of caution is warranted in regards to this particular observation as the standard errors is extremely close to the reported co-efficient, indicating the possibility of anomalous significant finding.

The analysis indicates that being associated with an ethnic category of African ($\beta_{0ij} = 0.086$, $p = 0.02$), Indian ($\beta_{0ij} = 0.559$, $p = 0.01$), White or Black African ($\beta_{0ij} = -1.346$, $p < 0.01$) or Other ($\beta_{0ij} = 0.960$, $p < 0.01$) is related with a rise in emotional literacy as well as a rise in pro social behaviour. However, these results need to be treated with caution, as previously mentioned, the sample size of ethnic groups is overall very low, and may not offer accurate results.

All categories of SEN provision are associated with a decline in Time 3 pro social behaviour scores, however, provision at school action plus is the only category that indicates a significant relationship ($\beta_{0j} = -0.267$, $p = 0.02$). Consistent with the overall theme of this analysis, the magnitude of all the effects are extremely small. For instance, being identified as receiving provision at school action plus level is associated with a .267 decrease in self-rated pro social behaviour scores at Time 3.

The most significant predictor of Time 3 scores is pro social score Time 1 ($\beta_{0ij} = 0.407$, $p < 0.01$), which indicates a similar relationship between Time 1 and 3 when compared with the other analysis.

Summary statements

- Variance is almost exclusively confined to the pupil level (99.38%)
- The overall variance of the model is extremely low, indicating the magnitude of the predictor variables impact on pupils pro social behaviour is also very low
- There is no significant relationship between self-rated pro social behaviour and any of the school level variables
- The inclusion of school SEAL status as a predictor variable has an extremely low impact on overall model fit ($\chi^2 (1, n = 4506) = 0.452$ $p = .51$) and corresponds with a low value of significance ($p = 0.25$) as well as an extremely low coefficient (-.047), indicating that SEAL status has almost no impact on self-rated pro social behaviour scores at Time 3
- Significant predictors at the pupil level include gender ($\beta_{0ij} = -0.823$, $p < 0.01$), SEN provision at school action plus level ($\beta_{0j} = -0.267$, $p = 0.02$) and ethnicity, although for the reasons mentioned, this result must be treated with caution

5.8 Evidence for an Underlying Relationship

- a) Emotional literacy and mental health difficulties?
- b) Emotional literacy and pro social behaviour?

From the preceding analysis it is clear that school level effects, including whether an individual school chooses to implement SEAL or not, are marginal in improving pupils self-rated mental health difficulties or their self-rated levels of pro-social behaviour.

A minimal school effect, and the non-significance of a school's SEAL status is a finding contrary to the majority of the previous literature presented in respect of SEL. On the basis of the prior review (see chapter 3), a much larger magnitude of effect would have been expected. Although the range of methodological and psychological criticisms discussed in the literature review which raise doubt into the validity of these claims should also be noted.

The SEAL programme shows no significant observable effect, and there is sufficient cause to doubt contrary findings from other similar SEL programmes. Therefore, there remains a question as to whether a lack of 'SEAL effect' is a result of difficulties with the implementation or design of the programme (see Lendrum, 2010 for a in depth review), or whether there is a more systematic difficulty with the underlying psychological framework that links changes in emotional literacy to better mental health and social skills.

Research Question 4 examines the relationship between emotional literacy and the proposed favourable outcomes of better mental health and improved pro social behaviour. On the basis of the preceding analysis, the most significant background predictors are used to control for pre-existing effects in regards to gender, SEN provision and socio-economic status in order to examine more precisely the underlying nature of any relationship. Additionally, Time 1 data (Time 1 total emotional literacy, Time 1 total difficulties scores, Time 1 pro social behaviour scores) are used as the explanatory variables (as shown in Figure 5.1). This is because the baseline data represents the largest sample size within the study (see section 5.2.3), and is theoretically free from any influence from the SEAL programme over the course of the study, as the data was collected prior to its implementation.

Because the analyses within this section are based on results gained from the previous multi-level models, the analysis techniques and presentation of the results are maintained for purposes of consistency and comparison. Only the significant predictors from the previous models are included. A consequence of including only the significant predictors is the ignoring the inherent clustering by school, as the majority of the variance within the previous models was identified at the pupil level. Therefore, it should be noted that the analyses presented within this section represent single level regression models, formatted to provide comparison with the preceding results.

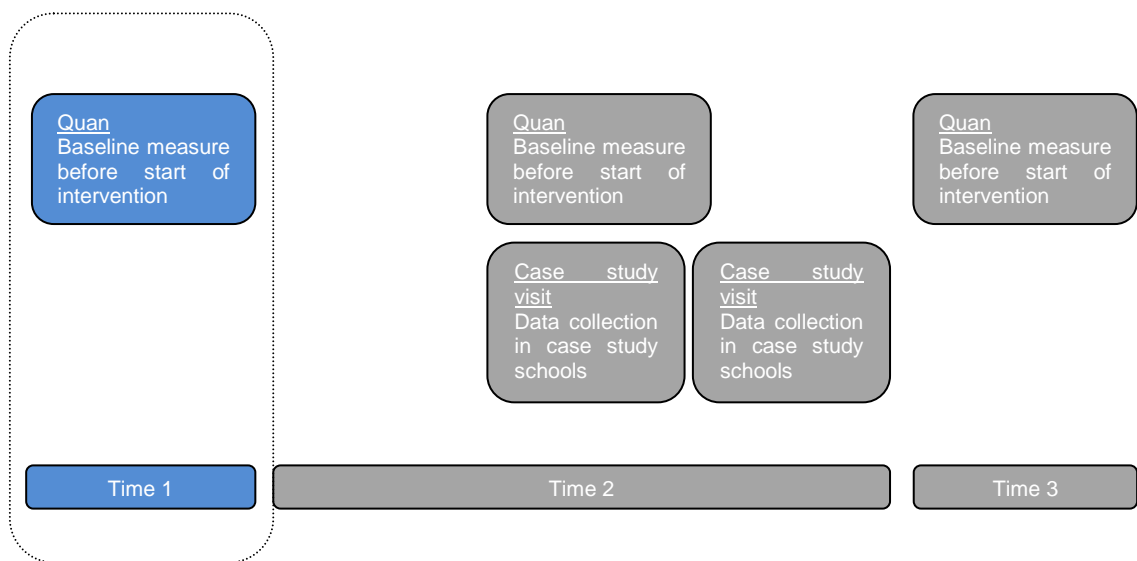


Figure 5.1 Timeline showing Time 1 data used for research question 4

5.9 Research Question 4a) Emotional literacy and mental health

What is the evidence for an underlying relationship between emotional literacy and mental health difficulties?

Empty Model ($\beta_{0i} = 11.616 (0.114)$)				Background Model (pro social Behaviour) ($\beta_{0i} = 17.112 (0.360)$)				Full Model (emotional literacy) ($\beta_{0i} = 47.439 (0.475)$)			
	Co-efficient β	Standard error	p		Co-efficient β	Standard error	p		Co-efficient β	Standard error	p
Gender (if male)	0.805	0.157	<.01	Gender (if male)	0.729	0.161	<.01	Gender (if male)	0.618	0.114	<.01
FSM (if eligible)	1.597	0.223	<.01	FSM (if eligible)	1.386	0.218	<.01	FSM (if eligible)	0.656	0.154	<.01
School action	2.051	0.254	<.01	School action	1.920	0.248	<.01	School action	0.832	0.176	<.01
School action plus	3.030	0.393	<.01	School action plus	2.934	0.384	<.01	School action plus	0.717	0.272	.02
Statement	3.831	0.582	<.01	Statement	3.733	0.570	<.01	Statement	0.949	0.403	0.03
				pro social Time 1	-0.679	0.042	<.01	pro social Time 1	0.416	0.033	<.01
								ELAI Total Time 1	-0.523	0.007	<.01
-2*log likelihood = 36031.424				-2*log likelihood = 35780.278				-2*log likelihood = 31825.771			
$\chi^2 (1, n = 4459) = 251.146, p < .01$				$\chi^2 (1, n = 4459) = 3954.507, p < .01$							

Table 5.15 Single level model exploring relationship between emotional literacy and mental health

Results from Table 5.15 indicate that after controlling for significant predictor variables, there remains a significant relationship between Time 1 total emotional literacy scores and Time 1 self-rated total difficulties scores ($\beta_{0ij} = -.523$, $p < 0.01$). This finding is supported by a significant improvement in model fit once all of variables had been accounted for ($\chi^2 (1, n = 4459) = 31825.771$ $p < .01$). Therefore it can be said that a 1 point change in Time 1 Total emotional literacy scores is associated with a 0.523 reduction in self-rated total difficulties scores at Time 1, once all other significant factors have been controlled for.

It is important to note the magnitude of the effect. A one point rise ELAI is associated with a 0.523 reduction in self-reported mental health difficulties. This is smaller than all of the other aforementioned predictors of gender (0.618), FSM eligibility (0.656) SEN provision (0.717 – 0.949), aside from pro social behaviour (0.416).

5.10 Research question 4b) Emotional literacy and pro social behaviour

What is the evidence for an underlying relationship between emotional literacy and pro social behaviour?

Empty Model ($\beta_{0i} = 8.097 (0.035)$)				Background Model (total difficulties) ($\beta_{0i} = 8.841 (0.058)$)				Full Model (emotional literacy) $\beta_{0i} = -1.829 (0.311)$)			
	Co-efficient β	Standard error	p		Co-efficient β	Standard error	p		Co-efficient β	Standard error	p
Gender (if male)	-1.147	0.048	<.01	Gender (if male)	-1.093	0.047	<.01	Gender (if male)	-1.042	0.043	<.01
FSM (if eligible)	-0.311	0.038	<.01	FSM (if eligible)	-0.209	0.067	<.01	FSM (if eligible)	-0.164	0.061	<.01
School action	-0.191	0.078	0.03	School action	-0.062	0.077	0.23	School action	-0.022	0.070	0.38
School action plus	-0.155	0.120	0.12	School action plus	0.052	0.119	0.34	School action plus	0.216	0.108	0.04
Statement	-0.160	0.178	0.20	Statement	0.101	0.176	0.29	Statement	0.295	0.159	0.05
				total difficulties Time 1	-0.064	0.004	<.01	total difficulties Time 1	0.065	0.005	<.01
								ELAI Total Time 1	0.123	0.004	<.01
-2*log likelihood = 22751.264				-2*log likelihood = 22421.154				-2*log likelihood = 21324.116			
$\chi^2 (1, n = 4406) = 330.11, p < .01$				$\chi^2 (1, n = 4406) = 1097.038, p < .01$							

Table 5.16 Single level model exploring relationship between emotional literacy and pro social behaviour

Table 5.16 indicates a significant relationship between Time 1 Total emotional literacy scores and Time 1 pro social behaviour scores ($\beta_{0ij} = 123$, $p < 0.01$). χ^2 analysis indicates this relationship creates a significantly better model fit after controlling for other significant factors ($\chi^2 (1, n = 4459) = 21324.116$ $p < .01$). Therefore it can be said that a 1 point change in Time 1 total emotional literacy scores is associated with a 0.123 rise in self-rated pro social behaviour, after all other significant factors have been controlled for.

In comparison to the previous model shown in Table 5.15, emotional literacy is shown to be a more stable predictor compared to SEN provision. This is comparable with a decrease of -.164 in Time 1 pro social behaviour scores if eligible for free school meals and a decrease -1.042 if male.

The importance of these predictors and the implications of a small, but significantly meaningful relationship between emotional literacy and favourable outcomes are discussed in chapter 6.

5.11 Research Question 5 - Qualitative indicators of impact

5.11.1 Introduction

The results shown in Tables 5.13 - 5.15 have indicated several important features in regards to the impact of the Secondary SEAL programme. These are summarised below:

- There appears to be very little role in regards to Local Authorities impacting upon emotional literacy in schools.
- Although there is some evidence for school level factors impacting upon emotional literacy (Table 5.12), the overwhelming variance in all three models appears to be at the pupil level.
- There is marginal evidence of a SEAL effect on pupil's emotional literacy and mental health difficulties; however the analysis in Table 5.13 suggests that any meaningful impact is exceptionally low.
- Table 5.15 and Table 5.16 show a significant relationship between emotional literacy, mental health, and pro social behaviour; however the strength of the relationship is smaller than might be expected on the basis of previous literature.

Before such statements are applied to the wider population of English secondary schools, there is an important question as to the representativeness or validity of the results in regards to the end users (namely the pupils, teachers and school staff) themselves. Are the results shown in the previous tables representative of the views and opinions of the teachers and staff? Would teachers and staff agree that the inferential statistics presented accurately reflect what is occurring within their own schools? Would school staff and teachers agree with the results?

Qualitative comments supporting the findings of the quantitative aspect of the study would provide both methodological rigour to the design of the evaluation (as the findings would be supported through multiple perspectives) as well as a 'richer'

picture of the results, framed with individual perspectives. What is of more interest however, is the identification and exploration of any discrepancies between the statistical conclusions and the qualitative aspect of the study. Discrepancies in either the nature or the extent of impact within schools allows for a more critical examination of the statistical conclusions. For instance, it is possible that staff and teachers interpret impact through alternative qualitative indicators that are other not measurable through quantitative means.

The use of a pragmatic framework within the study allows such questions to be explored, as alternative methodologies are supported or encouraged in order to best answer the research questions. In this regard, it is considered extremely important to assess the end-users attitudes towards the programme they are implementing.

The following section assesses the comments, opinions and statements and documents made by a variety of staff in the last two visits to case study schools, which occurred after one full year of SEAL implementation (see appendix 1). Results are analysed for their salient features and then compared with the statistical findings in an attempt to highlight any meaningful convergences or divergences.

5.11.2 Qualitative attrition

School level attrition

In the same way schools failed to return questionnaires over the duration of the study, some schools also failed to arrange case study visits with the researchers. Although there is no formal method to assess the remaining quality of the data, there are still implications as to schools failing to express their views and opinions. Table 5.17 (below) shows all case study schools participated in at least three qualitative visits.

	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5
CS1	X	X	X	X	X
CS2	✓	✓	✓	X	✓
CS3	✓	✓	✓	✓	✓
CS4	✓	✓	X	✓	X
CS5	✓	✓	✓	✓	✓
CS6	✓	✓	✓	✓	✓
CS7	✓	✓	✓	✓	✓
CS8	✓	✓	✓	✓	✓
CS9	✓	✓	✓	✓	✓
CS10	✓	✓	✓	✓	✓

Table 5.17 Qualitative school level attrition

'Missing' data

Also, similar to the issues of attrition faced in the quantitative sample, although a school may take part in a case study visit; there are implications for the quantity and quality of the data collected within the school during the appointment. Table 5.18 below indicates the quantity, type and nature of the data collected within case study schools during visits 4 and 5.

	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS9	CS10
Observations: Classroom			✓	✓✓	✓	✓	✓		✓
Outside of classroom (e.g. lunch)	✓	✓	✓	✓	✓	✓	✓		✓
Interviews: Pupil focus group		✓✓		✓✓	✓✓	✓✓	✓✓		✓✓
Teaching assistants		✓		✓					
Subject teachers				✓	✓	✓	✓✓		
Form tutors		✓	✓		✓	✓	✓		✓
Non-teaching staff (e.g. lunchtime supervisors)		8			✓	✓	✓	✓✓	
Head-teacher / Deputy Head					✓	✓			✓
SEAL lead	✓✓	✓✓✓✓	✓	✓✓✓	✓✓	✓✓	✓✓	✓	✓✓

Table 5.18 Data collection within schools

5.11.3 Residual Graphs

Using multi-level modelling techniques, it is possible to graphically represent pupil data aggregated to the individual school level (in other words, the average score of pupils for each school). Figures 5.3 – 5.5 show the Time 3 scores for each school.

How to read the Residual Graphs

Residual graphs comprise of three components:

School average – The average value of pupil scores for a particular school is indicated on the residuals chart by a triangle. SEAL schools are denoted by inverted black triangles and comparison schools are denoted by upright black triangles. Each individual case study school is also clearly marked as white triangles and labelled (Figure 5.2). As shown in Table 4.7, CS2 did not return pupil questionnaires at Time 3, and therefore is not included in the graphs.

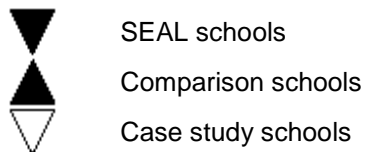


Figure 5.2 Legend for residual Graphs (school SEAL status)

Whiskers - The ‘whiskers’ above and below each school represent the 95% confidence intervals – these are estimates of the range within which the sample mean of each school resides. If the whiskers of a particular school are completely above or below the zero residual line (see below), then that school is considered to be significantly different from the rest of the sample.

Zero Residual - The horizontal line in each chart is the ‘zero residual’ (or grand centred mean), which is the expected average of all of the schools. Schools which appear above the zero residual line have a higher average score, compared to the entire sample. As residual graphs are ranked by school average (the lowest scoring schools are displayed on the left, the schools with the highest scores on the right of the graph), A ‘SEAL effect’ would be evident if inverted triangles (or in the case of SDQ total difficulties and SDQ behaviour problems, below) were clustered on one side of the residuals chart. There is also the opportunity to examine the position of

the case study schools, both in relation to each other, and in comparison with the wider sample. If case study schools were significantly different compared to the rest of the quantitative sample, then there is an opportunity to examine the qualitative data in attempt to explain this finding. Equally, if more than one case study school displays results significantly different from the majority of the sample, there is cause to search for commonality in the comments from the schools.

Residual Time 3 emotional literacy scores ranked by school

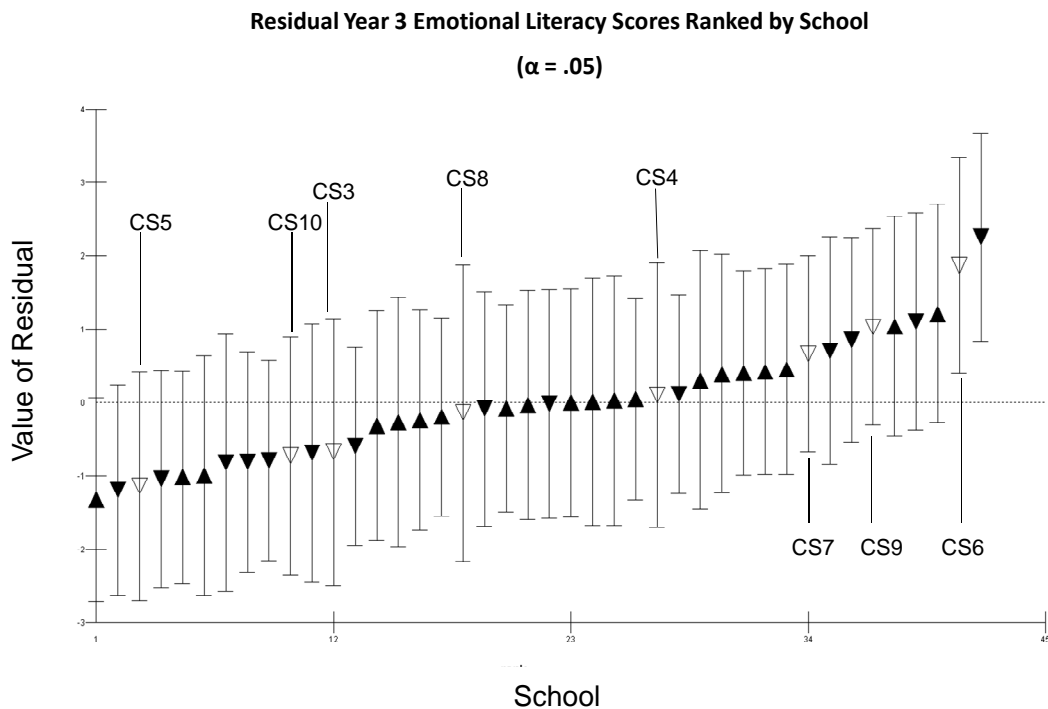


Figure 5.3 Residual Time 3 emotional literacy scores ranked by school

Figure 5.3 shows the seemingly random distribution of case study schools throughout the larger quantitative sample. Although there appears to be a variation in scores across schools, it is worth noting that large confidence intervals (denoted by the whiskers) means only two schools are considered to have significantly higher average ELAI scores compared to the whole sample.

No school is considered to have significantly low ELAI scores, compared to the average. This is indicative of a lack of variation at school level in influencing pupil's emotional literacy.

Residual Time 3 total difficulties scores ranked by school

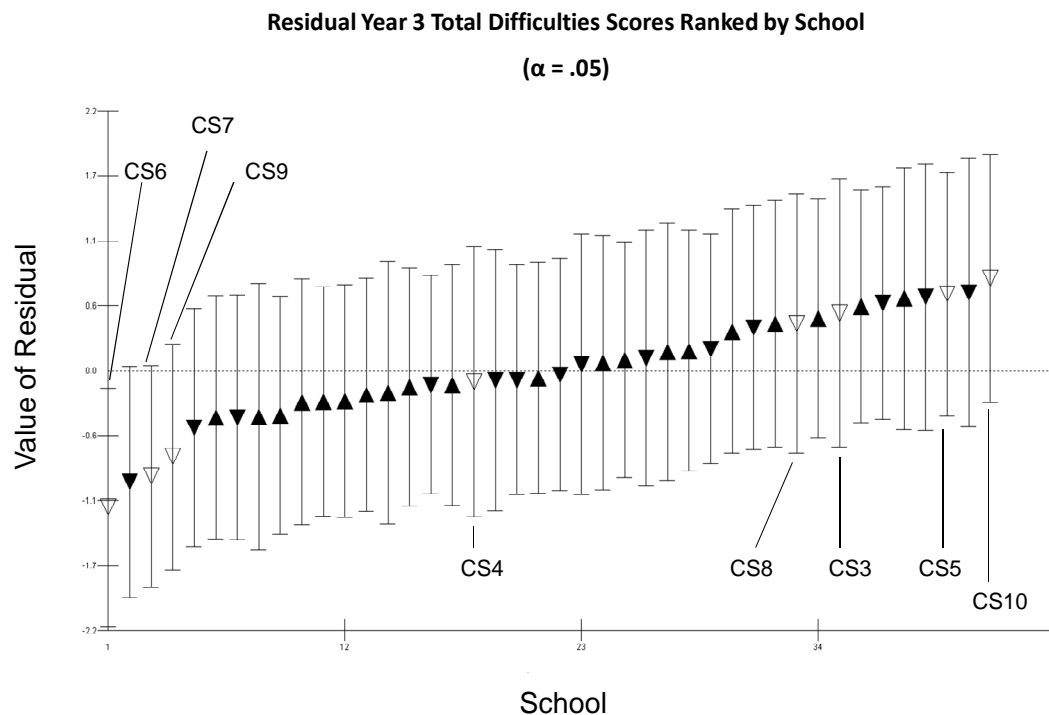


Figure 5.4 Residual Time 3 total difficulties scores ranked by school

Figure 5.4 shows the distribution of average SDQ: total difficulties scores across the whole sample. It is important to note that low SDQ scores represent the ideal, e.g. no reported mental health difficulties. Therefore a SEAL effect would be represented by a clustering of inverted triangles on the left hand side of the graph. As can be seen, both the case study and other SEAL schools are distributed amongst the larger sample, and only one school (CS6) displays a significantly 'better' mental health average. No school shows a significantly higher total difficulties score. This suggests there is little effect of SEAL status on influencing pupils self-rated mental health difficulties at Time 3.

Residual Time 3 pro social behaviour scores ranked by school

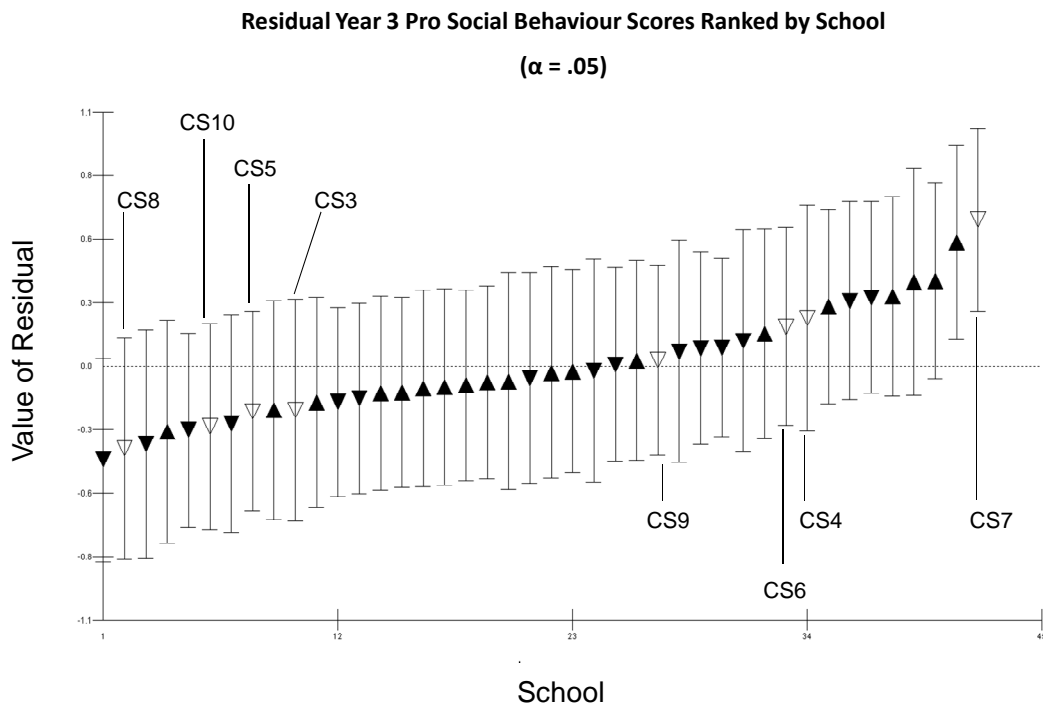


Figure 5.5 Residual Time 3 pro social Behaviour scores ranked by school

There is an almost identical pattern shown in Figure 5.5. It is worth noting the seemingly random distribution of case study schools throughout the sample, indicating that case study schools show no particular pattern to their spread of scores compared with either other case study schools, or with the wider SEAL and comparison samples. Although CS7 shows a significantly higher pro social behaviour scores compared to other schools, this is not replicated in the previous two charts.

Overall, a more or less random distribution of SEAL and comparison schools is observed for all three graphs. There are only five cases (two schools for the ELAI; one school for the SDQ total difficulties; two schools for the SDQ pro-social) across the whole series of residuals charts where school scores are outside the expected range (that is, where upper or lower confidence intervals do not overlap the zero residual line). This suggests that different approaches to and progress in implementing SEAL have not yielded differential outcomes. It should be clearly

established that the preceding quantitative analysis and the location of the case study schools in relation to the wider sample would suggest a minimum of observable impact in all case study schools. Case study interviews, focus groups and observations are now analysed in order to see how closely attitudes, thought and opinions of those directly involved with SEAL match the findings of the analysis so far.

5.12 Qualitative Data Analysis

In reference to the procedures listed in section 4.5.2, a predominantly content-analysis approach was taken with the use of a-priori coding (see below). However, in reference to the pragmatic approach adopted, the creation of new themes was not ruled out (as consistent with a pragmatic design) should they be deemed appropriate by the researcher during analysis.

Data within the individual themes were also split in relation to Greenberg's hierarchy (Figure 3.5) which distinguishes between school and pupil level data.

Consistent with the prior statistical analysis, school level comments are interpreted to reflect statements made about the school environment as a whole, or seen to include comments in regards to the whole student body. In contrast, pupil level comments are limited to a particular example or number of examples, and do not directly relate or infer any changes beyond the examples given (i.e. no whole school change). Three main themes were identified. According, sub themes within each major category were identified, and are outlined below:

Proximal impact on behaviour and social skills

This includes comments which identified changes in the way pupils behave and interact, either with each other, or in relation to staff and teachers.

School Level Impact

- Impact on Behaviour
- Impact on Pupil – Teacher Relations

Pupil Level Impact

- Impact on Empathy
- Impact on Behaviour
- Impact on Social Skills
- Impact on Pupil – Parent Relations

- Impact on Pupil Teacher Relations
- Distal impact on favourable outcomes*

This includes comments which identified changes that are not directly related to behaviour or social skills, which includes impact which is otherwise unspecified. Also included are comments in relation to negative impact.

School Level Impact

- Negative Impact
- Impact on Exclusions
- Impact on Staff
- Unspecified Impact
- Impact on School Climate

Pupil Level Impact

- Unspecified Impact
- Impact on emotional literacy
- Impact on Achievement / Attainment
- Impact on Vocabulary

Lack of impact

This table includes all the comments made in relation to a lack of observable impact, including reasons why impact cannot be identified. There is no pupil level comments are no staff identified a lack of impact in individual pupils.

School Level Impact

- Impact of Other Initiatives
- No Observable Impact
- Difficulty in Measuring Impact
- Impact of Other Initiatives
- Delay in observing impact

Table 5.19 explains the abbreviations used to reference the qualitative comments.

Abbreviation	Job Title
FT	Form Tutor
LTS	Lunch Time Supervisor
PFG	Pupil focus group
PLTS	Personalised Learning and Thinking Skills (CS5 Adaptation to SEAL)
SEF	Self-Evaluation Form
SL	SEAL Lead
SMT	Senior Management Team
T	Teacher
YW	Youth Worker

Table 5.19 Explanation of abbreviations

The full data displays containing the qualitative data are shown in appendix 7.

5.12.1 Qualitative impact of SEAL on: proximal behaviour and social skills

There are some comments suggesting that in three of the nine case study schools, there was an observable change in behaviour within the overall year group, which the staff interviewed attributed to the SEAL programme. Lunch time supervisors from both CS6 and CS7 suggest there was better behaviour at lunch time, as evidenced by the following quotes; *“I think it’s really helped them to improve their behaviour.”*(LTS, CS6, V5): *“I think it has probably improved ... it used to be a lot of argy bargy, it all seems to go a lot more smoothly now ... I think that’s probably part of all everybody being aware of everybody else.”*(LTS, CS7, V4). In the case of CS6, this is supported by the SEAL lead suggesting that conduct in lessons had also improved as a result of SEAL. *“There have been less instances of [head of year] being called out to deal with a whole class... and he feels that the impact that SEAL has had on the whole class of pupils are aware and self-aware...and that is impacting on the way that they conduct themselves in lessons.”*(SL, CS6, V4).

Document analysis from CS10 suggests the impact on behaviour extended throughout several year groups, and was recorded in the school’s self-evaluation form: *“Behaviour in Year 7, 9 and 11 (2008-2009) is significantly improved on previous years. Our adoption of SEAL as a major whole school priority can be credited with some of the reasons for improved attitudes and behaviour. SEAL*

influences focus sessions', assemblies, PSHCE (Y9 and 8 2008-9, and all KS3 2009/10) and mentoring/watching."(SEF, CS10, V5).

There is also some evidence to suggest that staff observed an improvement in teacher-pupil relations, as comments from four different schools indicate that either a SEAL lead or form tutor had mentioned that relationships between staff and pupils had improved as a result of SEAL. This is summarised in a quote from the SEAL lead from CS3: *"[The students] seem to be able to know how to go and access support when they need it more. It's more almost like its okay to say how you feel or, or discuss it with a teacher ... I just think it's moved relationships on."* (SL, CS3, V5).

In consideration of the volume and range of data collected during the case study visits (see section 4.5.2), the lack of triangulation from other members of staff, and the lack of similar comments from the majority of the other case study schools suggests that comments may be taken as an indication as to a *lack* of observable impact in behaviour. This is especially true as behavioural changes are part of the main goals of SEAL and behaviour is the most extraneous and observable aspect of the SEAL objectives (as compared to intra-personal skills such as self-awareness).

A larger selection of schools was able to provide comments in regards to changes in particular pupils or groups. SEAL leads (CS4, CS7), pupils (CS5, CS7, CS10), and learning support assistants (CS6) were able to provide specific examples of a positive change in social skills, behaviour and pupil-teacher relations.

In the case of CS 10, this appeared to be as a result of deliberate targeting: *"31 students identified as high to medium behavioural problems are mentored using weekly SEAL targets. Progress for 15 students judged good or better."* (SEF, CS10, V5). However, for CS6 the observation appears more incidental: *"I had one group of six girls who poor behaviour and difficult relationships and I have seen improvements in those girls ... four girls have really seemed to calm down and are responding in a more positive way."* (LTS, CS6, V5).

For CS5 and CS7, evidence for change is provided by the pupils themselves.

"There was one [SEAL session] that said at the end of this lesson I will not be afraid to go to the teacher if I need to. ... Then the next day I did actually go to her." (PFG, CS5, V5). In the case of CS7: *"You get to understand how other people feel like so it kind of helps to build like relationships and stuff cause you know how they feel. I was*

going to say um you're more aware of how people feel around you, what you do how it affects things.” (PFG, CS7, V5).

Do these indicators support or contrast the quantitative findings?

Consistent with the quantitative findings, there is a comparative lack of qualitative data and observable change in behaviour at the whole school or whole year level as a result of the SEAL programme. Comments from individuals within schools that support a change or behaviour are not supported or triangulated with other members of staff (e.g. a lack of consistent support for these statements). Of importance is the emphasis on changes observed in individual pupils or groups across several schools. A range of sources cite specific examples where an impact on behaviour, empathy or social skills has been noted. This is particularly relevant as significant changes within a small range of individuals or groups would go otherwise unnoticed in the quantitative analysis, especially if there is no clear identity to the individuals in question (e.g. SEN provision, FSM).

5.12.2 Qualitative impact of SEAL on: distal favourable outcomes

In comparison to the previous analysis, there appears far larger number of comments, both within and between schools observing more generalised impact as a result of SEAL.

In regards to nature of the observed favourable outcomes, there is some suggestion that some schools are keen to draw a link between SEAL and an impact on the number and frequency of exclusions. Comments from schools are quite explicit in this regard, in the case of CS8: *“We have taught SEAL to the year 8, the one thing I would definitely say is we have had a reduction in exclusion.”* (SL, CS8, V5). This is also true for CS10: *“We’ve had I think just one or two exclusions... with the current year seven... they’d be normally ten, fifteen... We’ve done analysis... so we know year sevens are very good.”*(SL, CS10, V4).

However, the majority of the recorded comments of impact fall into the sub-theme of ‘unspecified impact’ as several members of staff across several schools (CS2, CS3, CS4, CS6, CS7) indicate that although they feel there has been a change as a result of SEAL, there is no indication as to what form this change may have taken. This is

very neatly summarised by the following quotes from CS7: “*whether there’s a direct impact of SEAL...I can’t sort of say a hundred percent but I feel strongly that there is.*” (SMT, CS7, V5) and by a teacher from CS6: “*I can’t put my finger on it but it just feels different.*” (T2, CS6, V5).

More specific changes are noted at the pupil level. There are several isolated examples in three of the case study schools in which SEAL leads observe an increase in the range of emotional vocabulary used. For instance, “*pupils are able to talk about their own behaviour much more articulately and so pupil’s emotional literacy ... has developed partly as a result.*”(SL, CS6, V5). Of particular note are the comments of the pupils from CS5 who suggest that the implementation of SEAL has directly impacted upon their ability to work together in groups, which has a subsequent impact upon their academic achievements: “*In the lesson if you see your PLTS objective then you kind of sort of know what to do like try to achieve so it gives you something to work up to.*” (PFG, CS5, V5). “*If you work together you can accomplish a bit more so if you work together you can be better in that subject.*” (PFG, CS5, V5).

Do these indicators support or contrast the quantitative findings?

The comments in regards to impact upon generalised favourable outcomes are consistent with the intended outcomes of SEAL, and raise several examples that are not directly included within the quantitative analysis. For instance, neither number of exclusions or academic attainment have been measured in regards to SEAL. However, as with the previous analysis, the isolated nature of the comments and lack of triangulation mean that this form of impact is largely unsubstantiated. The number of comments supporting an unspecified impact may support the quantitative findings of a significant but small relationship between emotional literacy and mental health, as such changes may be difficult to define or isolate. In regards to the pupil level impact, there is a consistent theme of more concrete examples of change, associated with SEAL for specific pupils.

5.12.3 Qualitative evidence for: lack of impact

In line with recommendations of the pragmatic perspective, it is important to consider all aspects of the data, including comments and cases which cite a lack of any impact, as in this way, a full picture of the case study schools emerge.

Contrary to the previous tables, five case school schools are cited as stating that in at least some aspect, there has been no observable impact. In only one case (CS2), is the reason for no observable impact explained by lack of implementation of SEAL. As noted in Table 5.18, the 'quantity' and 'quality' of data collected during case study visits was less when compared to other case study schools. Additionally, as noted in Table 4.7, CS2 failed to return Time 3 data. The comments from CS2 make clear the SEAL lead's position in regards to the lack of implementation: "*I feel like I honestly feel like I've failed [laughter] I really have feel I do I feel like I've failed on this.*" (SL, CS2, V5).

In one other school (CS10), the SL suggests that the impact is not observable, but has occurred: "*I'd struggle to put my finger on it, that's SEAL at work [at school].*"(SL, CS10, V4).

For all other schools (CS6, CS7), both teachers and SEAL leads explain that they believe no change has occurred: "*In terms of seeing a whole school shift I personally haven't seen that.*"(T, CS6, V5). "*I don't think in a conscious way at the moment it's having an impact on my teaching.*"(FT, CS7, V5). In the case of CS8, evidence is presented to support the lack of SEAL effect: "*It's difficult to measure impact and you know we can look at behaviour logs, well that would just show the same as ever.*"(SL, CS8, V4).

Such statements are consistent with the lack of supporting comments in the previous tables, as there is a higher degree of triangulation across sources within schools (CS8, CS10), then compared to the analysis of impact on behaviour or other favourable outcomes.

Do these indicators support or contrast the quantitative findings?

In some regard, comments supporting a lack of observable impact are consistent with the quantitative findings. However, it is worth noting the different reasons cited for explaining the lack of change. The most discussed reason of staff from three of the case study schools (CS7, CS8, CS10) is the inherent difficulty in establishing any measurement for assessing impact (aside from the inventories used in the quantitative analysis). Statements explaining that SEAL impact is resistant to quantitative measurement are made by the same individuals cited as claiming a reduction in exclusions as a result of SEAL (CS8, CS10), impact on pupil skills and teacher pupil relations (CS7). This suggests that at least certain members of staff are willing to indicate the either there has been an impact on specific pupils, but not the general school population, or that change has occurred, but not in any measurable or definable way. Neither of these two scenarios would register with the quantitative analysis.

In regards to the sub theme of difficulty in measuring impact, it should be noted that these comments are not contrasted with strong claims of an observable or qualitative impact, suggesting that the inaccuracy or validity of the tools are not masking any significant differences in schools' comments.

5.12.4 Summary statements

Overall, there is lack of consistency and support in statements (e.g. low levels of triangulation) made by individuals in all areas of impact, therefore all qualitative comments are reflections of the individual, rather than an overall impression of the school(s).

Comments appear to reflect more emphasis on providing case examples of individual pupils or groups, rather than commenting on whole school change. This may be a result of a differential effect of SEAL on individual pupils, (which would not be noted in the quantitative aspect of the study) or may be a result of the impressions of the staff interviewed (i.e. they were more likely to notice specific examples), or is a comment on the lack of change overall.

6

6 Discussion

6.1 Introduction to chapter

The aim of this chapter is to present a brief summary of the purpose of the study, summarise the results reported in chapter 5, and to discuss the findings in relation to the literature presented in chapters 2 and 3.

This chapter is organised into four main sections. The first section provides a summary of the purpose of the study and highlights the important features of the results identified in chapter 5. This is achieved by discussing the common findings between all three models, as well as highlighting notable discrepancies within the results.

The second section discusses the findings in relation to previous research, specifically comparing the effects of the study with prior SEL evaluations. Additionally, the magnitude and nature of the underlying framework for emotional literacy as an agent for change is discussed.

The third section explores the various limitations of the current study, and explores the extent to which issues of design, data collection and analysis may have impacted upon the presented results. Various opportunities for future research are also discussed.

The final section provides a summary of the study and the results in relation to its contribution to knowledge, and on the basis of the overall discussion, provides recommendations to the various stakeholders involved in SEAL.

6.2 Purpose of the study

The primary purpose of the current study was to assess to what extent the Secondary SEAL programme was able to impact upon pupils' self-rated emotional literacy, mental health and pro social behaviours. The influence of other variables such as socio-economic status (as measured by Free School Meal (FSM) eligibility), Special Educational Needs (SEN) and gender were also considered. Through the use of the statistical technique known as Multi-Level Modelling (MLM), the amount of variation attributable to the dependent variables was examined at the LA, school and pupil level, in effect examining the overall effect of the school and associated variables (such as average attainment, size and number of unauthorised absences) on pupil-level skills. The use of this technique allows the various socio-demographic factors to be controlled when assessing the impact of the SEAL programme, and acknowledges the inherent natural hierarchy of schools and their contribution to pupil level outcomes and was selected in direct response to criticisms of methodological weaknesses in previous research (see section 3.4.4). It is important in the forthcoming discussion to note that the role of SEAL is assessed after demographic factors had been controlled, (gender, socio-economic status etc.) as other studies do not necessarily make that distinction.

Given the lack of evidence confirming the theoretical link between a rise in emotional literacy and improvement in favourable outcomes (such as mental health and pro-social behaviour) a second purpose of the study was to specifically investigate the theorised underlying relationship between emotional literacy and mental health and pro-social behaviour, in order to establish the nature and magnitude of any causal or mediating relationship between these variables.

A final aspect of the study, in line with the mixed methods approach (described in section 4.4) was the use of qualitative data to examine whether the comments and opinions of staff working within a selected number of case study schools reflected the findings of the quantitative results. This analysis was intended as both a form of triangulation in regards to methodological rigour, as well as a way of expanding the context in which the statistical results reside. This will also be explored in further detail in the forthcoming discussion.

6.3 Summary of main findings

6.3.1 RQ 1. What is the impact of the secondary SEAL programme on pupil's emotional literacy?

A multi-level analysis using Time 3 pupil self-rated emotional literacy scores as the dependent variable found that there was a marginal non-significant trend of belonging to a SEAL school ($\beta_{0j} = 0.494$, $p = .07$). This is supported by a lack of significant change in the model fit (as shown by the $-2 \cdot \log$ likelihood values between the background and full models ($\chi^2(1, 3306) = 2.141$, $p = .14$). This finding supports the statement that pupils' emotional literacy is not significantly improved by attending a SEAL school. Aside from the marginal non-significance, the magnitude of effect in belonging to a SEAL school is extremely small, translating into slightly less than a half a point rise in total score on the ELAI.

Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

Despite the marginal non-significance as SEAL as a school level variable, overall school level variance was found to be significant ($\text{var}(\mu_{0j}) = .349$, $p = .04$). However this accounts for only 1.9% of all explained variance. Within the school level, the identified significant predictors were FSM Eligibility ($\beta_{0j} = .049$, $p = .02$) and Attainment ($\beta_{0j} = .031$, $p = .01$). Although this finding may initially suggest a rise in emotional literacy as the number of pupils eligibility within a school increases, it is important to note both the extremely small magnitude of the effect of both variables, and that overall school variance, although significant, accounts for an extremely small fraction of the overall explained variance.

The identified significant pupil predictors were gender ($\beta_{0ij} = .770$, $p < .01$), (indicating that male pupils are more likely to report higher levels of emotional literacy) and the ethnicities of African ($\beta_{0ij} = .2296$, $p = .002$) and Other ($\beta_{0ij} = .3224$, $p < .01$). Being identified as receiving SEN provision at school action plus ($\beta_{0ij} = -1.256$, $p = 0.02$) and Time 1 ELAI score was also significant ($\beta_{0ij} = 0.511$, $p < 0.01$).

For the purposes of clarity, these figures are shown in Figure 6.1.

Dependent Variable = Pupil Time 3 Total Emotional Literacy Scores: ELAI
 *p < 0.05, **p < 0.01



LA Level Variance

(0.23%)

Total variance at this level
 (without explanatory variables)

LA Attainment = 0.017
 For every 1% rise in LA Attainment, Emotional Literacy scores
 rise by approximately 0.017 of a point



School Level Variance

(1.9%)*

%Eligible for free school meals = 0.5*
 Aggregate SEN = 0.011**
 Attainment = 0.033
 Unauthorised absence = 0.132
 Size = 0.00
 SEAL = 0.494



Pupil Level Variance

(99.7%)**

Gender (if male) = 0.770**
 Ethnicity
 African = 2.296*
 Other = 3.224 **
 FSM (is eligible) = -0.056
 SEN Provision
 School action = 0.425
 Action plus = -1.256*
 Statement = -0.316
 ELAI Score Time 1 = 0.511**

Figure 6.1 Summary of MLM Results: Total emotional literacy (ELAI)

6.3.2 RQ2. What is the impact of the secondary SEAL programme on pupil's mental health difficulties?

A marginal non-significant relationship was reported for the impact of adopting the Secondary SEAL programme on pupil's mental health difficulties ($\beta_{0j} = -0.298$ $p = 0.05$). The marginality of the effect is also identified by the lack of significant change in model fit when including SEAL school status as a predictor variable ($\chi^2 (1, n = 3306) = 2.653, p = 0.10$).

Are there any identifiable socio-demographic factors at school or pupil level associated with these skills?

The percentage of pupils eligible for free school meal status was the only significant predictor at school level ($\beta_{0j} = -0.025, p = 0.04$). However the extremely small size of the co-efficient makes interpretation of this statistic virtually meaningless.

A number of significant pupil level predictors were identified, consistent with almost all variance being confined to the pupil level (99.97%).

Receiving SEN provision at school action plus was associated with almost a two point rise in total difficulties score ($\beta_{0ij} = 1.841, p < 0.01$). Free school meal eligibility is also associated with a rise in Time 3 self-rated mental health difficulties, however to a lesser magnitude ($\beta_{0ij} = 0.730$ $p < 0.01$). A similar effect is found for gender, although the co-efficient indicates a decrease in mental health difficulties when identified as male ($\beta_{0ij} = -0.653$ $p < 0.01$), contrary to the majority of research in this area. The role of gender is discussed in more detail in section 6.5.1. Also, a significant relationship is identified between Time 3 and Time 1 scores total difficulties scores ($\beta_{0ij} = 0.518, p < 0.01$). Various ethnicities are identified as showing a significant contribution to self-rated mental health difficulties at Time 3. Specifically, African ($\beta_{0ij} = 1.177$ $p < 0.03$), Pakistani ($\beta_{0ij} = -1.735, p < 0.01$), Indian ($\beta_{0ij} = -1.521, p = 0.02$), Bangladeshi ($\beta_{0ij} = -2.526, p < 0.01$), Traveller ($\beta_{0ij} = 11.175$ $p = 0.01$), Romany ($\beta_{0ij} = -8.757, p < 0.03$) and Other ($\beta_{0ij} = 10.389, p = 0.01$). However, it should be noted that the small number of participants in each ethnic group makes interpretation difficult. This issue is discussed in more detail in section 6.7. A summary of these results are displayed Figure 6.2.

Dependent Variable = Pupil Time 3 Mental Health Difficulties: SDQ
 *p < 0.05, **p < 0.01



LA Level Variance

(1.26%)
 Total variance at this level
 (without explanatory variables)

LA Attainment = 0.09
 For every 1% rise in LA Attainment, Emotional Literacy scores rise by approximately 0.09 of a point



School Level Variance

(1.44%)*

%Eligible for free school meals = -0.025*
 Aggregate SEN = 0.009
 Attainment = -0.013
 Unauthorised absence = 0.038
 Size = -0.298
 SEAL = -0.298



Pupil Level Variance

(99.3%)**

Gender (if male) = -0.653**
 Ethnicity
 African = -1.177*
 Pakistani = -1.735**
 Indian = -1.521*
 Bangladeshi = -2.526**
 Traveller = 11.175**
 Romany = -8.757*
 Other = 10.389**
 FSM (is eligible) = 0.730**
 SEN Provision
 School action = 0.401*
 Action plus = 0.401*
 Statement = 0.763
 total difficulties Score Time 1 = 0.518**

Figure 6.2 Summary of MLM Results: Total difficulties (SDQ)

6.3.3 RQ3. What is the impact of the Secondary SEAL Programme on Pupil's pro social Behaviour?

School SEAL status showed no meaningful impact upon pupil's Time 3 self-rated pro social behaviour scores ($\beta_{0j} = -0.047$, $p = 0.25$). This is consistent with variance almost exclusively confined to the pupil level (99.3%).

Are there any identifiable Socio-demographic factors at school or pupil level associated with these skills?

The small portion of variance at the school level can be accounted for by the minor variations in the percentage of pupils eligible for free school meal status across schools. No other school level predictors indicate any meaningful level of significance.

Significant pupil level predictors included gender ($\beta_{0ij} = -0.823$, $p < 0.01$) which, contrary the previous analyses of emotional literacy, indicated being male reduced self-rated pro social behaviour. Also significant, was the level of SEN provision school action plus ($\beta_{0j} = -0.267$, $p = 0.02$). Time 1 scores ($\beta_{0ij} = 0.407$, $p < 0.01$) were also found to be significant. Four ethnic categories were identified as predicting significant changes in pro social behaviour. Specifically, African ($\beta_{0ij} = 0.086$, $p = 0.02$), Indian ($\beta_{0ij} = 0.559$, $p = 0.01$), White or Black African ($\beta_{0ij} = -1.346$, $p < 0.01$) or other ($\beta_{0ij} = 0.960$, $p < 0.01$). This is discussed in more detail in section 6.5.3.

A summary of these results are displayed in Figure 6.3.

Dependent Variable = Pupil Time 3 Mental Health Difficulties: SDQ
 *p < 0.05, **p < 0.01



LA Level Variance

(1.26%)
 Total variance at this level
 (without explanatory variables)

LA Attainment = 0.09
 For every 1% rise in LA Attainment, Emotional Literacy scores rise by approximately 0.09 of a point



School Level Variance

(1.44%)*

%Eligible for free school meals = -0.025*
 Aggregate SEN = 0.009
 Attainment = -0.013
 Unauthorised absence = 0.038
 Size = -0.298
 SEAL = -0.298



Pupil Level Variance

(99.3%)**

Gender (if male) = -0.653**
 Ethnicity
 African = -1.177*
 Pakistani = -1.735**
 Indian = -1.521*
 Bangladeshi = -2.526**
 Traveller = 11.175**
 Romany = -8.757*
 Other = 10.389**
 FSM (is eligible) = 0.730**
 SEN Provision
 School action = 0.401*
 Action plus = 0.401*
 Statement = 0.763
 total difficulties Score Time 1 = 0.518**

Figure 6.3 Summary of MLM Results: Pro social Behaviour (SDQ)

6.3.4 Summary of common findings between the three models

Distribution of variance

An overall trend across all three models is the overwhelming distribution of the variance at the pupil level, which is indicated by the ‘empty’ models, as shown in preceding results section (see Table 5.12, Table 5.13 and Table 5.14). A summary of the distribution of the variance is provided in Table 6.1.

Level	Time 3 emotional literacy	Time 3 total difficulties	Time 3 pro social Behaviour
LA	0.4%	1.26%	2.14%
School	1.9%	1.44%	2.77%
Pupil	97.7%	99.97%	95.09%

Table 6.1 Time 3 Percentage of variance explained before controlling for explanatory variables (‘empty’ model)

In interpreting this result, it is clear the role of school in influencing pupil’s emotional literacy, mental health and pro-social behaviour is extremely marginal. These results indicate that across the entire sample (both SEAL and comparison schools); skills are seen to vary across individuals, rather than by school.

Consistent predictors

Consistent with the low level of school level variance, the most significant predictors across all three models were at the pupil level:

Gender – Gender was a consistent significant predictor across all three models, with one of the largest magnitudes of all variables in accounting for variation in pupil’s emotional literacy, mental health and pro social behaviour scores at Time 3. An important feature of this variable is the direction of the relationship reported in each of the three models. Analysis suggests that being a male is associated with a 0.7 point *increase* in emotional literacy score, and a corresponding 0.6 point *decrease* in self-rated mental health difficulties. Such a finding is contrary to previous studies which show males being less emotionally literate and having higher mental health difficulties than their female counterparts (Schutte et al., 1998; Mayer, 1999; Day & Carroll, 2004). One likely explanation of this finding is the acknowledgement of gender differences between internalising and externalising difficulties (for instance,

anxiety vs. disruptive behaviour) which the SDQ does not distinguish between. This issue is discussed further in section 6.6.1.

Special Educational Needs - Another consistent finding amongst the three models was the role of SEN provision in influencing the Time 3 scores of emotional literacy, mental health and pro social behaviour, specifically, being identified as receiving provision at school action plus (rather than school action or statement). Although the categories of school action and statement showed some marginally non-significant results across the three models, school action plus was the only consistently significant predictor for each of three models. Being identified as receiving SEN provision at school action plus is associated with a decrease in both emotional literacy and pro social behaviour as well as a corresponding rise in self-reported mental health difficulties at Time 3. The magnitude of the effect of the category of SEN provision was highest for self-reported Time 3 mental health difficulties, which corresponded to a 1.8 increase in total SDQ score, as well as a 1.2 point decrease in emotional literacy. The magnitude of decrease in self-rated pro social behaviour was smaller (-0.2), but was still considered significant ($p = 0.02$). This finding is of particular value as similar results were not found for the other categories of SEN provision (school action / statement). The implications of this finding are discussed further in the next section.

Time 1 scores – Unsurprisingly, scores at Time 1 significantly predicted pupil's responses at Time 3, for each of the three models. Although the main purpose of including this predictor was to control for variation prior to the study (to obtain baseline scores in which to compare the degree of change in scores from Time 1 to Time 3), to look for an effect of the SEAL programme specifically, the overall lack of change is interesting in the wider context. A significant result for this predictor indicates a degree of stability in assessing emotional literacy, mental health, and pro social behaviour over the first three years of secondary education. The effect of maturation and its possible impact on assessment of these skills is discussed further in section 6.7.4.

Ethnicity – The role of ethnicity in modelling pupil's emotional literacy, mental health and pro social behaviour is of particular interest for two reasons. First, there was a consistent effect of ethnicity across the three models, and the magnitude of the effect in contributing to pupil's skills and competencies was high. Secondly, there is very little research that analyses this particular demographic, and therefore there is an

opportunity to further current understanding of the role of ethnicity in regards to the dependent variables. However, as mentioned previously, there are methodological limitations to consider when assessing the effect of this variable (specifically, the categorisation ethnicity and the distribution of sample size within ethnic categories), and this limits the conclusions that can be drawn. The implications and extent to which the results are considered valid are discussed in section 6.7.

6.3.5 Summary of distinctive results (findings not replicated across all three models)

It is arguable that the effect of the SEAL programme on pupil's self-rated skills and competencies is inconsistent across the three models. Although SEAL is not recognised as a significant predictor in any of the three models, a more detailed analysis would suggest that SEAL is marginally non-significant in predicting variation in pupil's self-rated emotional literacy ($p = 0.07$) and mental health ($p = 0.05$) but shows no relationship at all in regards to pro social behaviour ($p = 0.25$).

This is an important distinction when attempting to validate the theoretical framework by which SEL programmes report to be based on, namely that a rise in emotional literacy leads to a similar decline in mental health difficulties and a rise in pro social behaviour. On the basis of this analysis, the ability of the SEAL programme to effect change in emotional literacy, mental health and pro social measures is not justified. This point is discussed further when examining the underlying psychological framework supporting emotional literacy, mental health and pro social behaviour in relation to the implication of SEL programmes to effect change in pupil's behaviour (see section 6.6).

Another inconsistent finding of considerable interest was the relationship of free school meal eligibility (a pupil level variable indicating whether an individual pupil is eligible for free school meals, a proxy for socio-economic status) and % FSM Eligibility (a school level variable indicating what portion of the whole school is eligible for free school meals). It is interesting both in regards to the relationship between the two variables, but also in terms of the significance in the model for predicting emotional literacy and self-rated mental health difficulties. One major advantage of MLM is to investigate these relationships at both levels, and in doing so, results worthy of comment are produced, especially given the lack of prior research in this area. When considering the role of FSM (at both school and pupil

level) in regards to variation in pupils self-reported emotional literacy scores, it is interesting to note that %FSM at the school level was considered a significant predictor ($p = 0.02$), whereas the pupil's individual status was not considered significant ($p = 0.4$). It is worth noting that although the size of the co-efficient is similar for both the pupil and school level variables (approximately 0.05 of a point in emotional literacy score), the contribution is much higher at the school level. This is because it represents a percentage increase (e.g. 0.05 times the percentage value of FSM), rather than a binary categorical variable. Therefore this result may be explained by the fact that other pupil level predictors are better at explaining variance. This means the unique contribution at the pupil level is not significantly meaningful once they are taken into account. The same situation does not occur at the school level, where the socio-economic average of all the pupils is a more important school level factor. Given the small size of the co-efficient, the practical, observable difference is likely to be small; however it is worth noting that school level factors are not completely redundant in impacting pupil level skills.

A closely related point is the nature of the relationship between the school and pupil level measures of FSM in relation to self-rated mental health difficulties.

When looking at self-rated mental health difficulties as the dependent variable, %FSM is considered significant at the school level, (as in the case of emotional literacy), but is also recognised as significant at the pupil level, even when the same predictor variables in the emotional literacy model are accounted for. This indicates that mental health difficulties reside at the pupil level to a greater degree than emotional literacy. This has interesting implications in two regards. Firstly, this is further evidence suggesting that improving emotional literacy does not have an equivocal effect on related favourable outcomes. Secondly, mental health issues may be less amenable to influence at the school level, as, unlike the emotional literacy model, the co-efficient is proportionally larger at the pupil level.

6.3.6 Evidence for an underlying relationship between emotional literacy and favourable outcomes

Using the baseline, Time 1 data (prior to any theoretical influence of the SEAL programme), the relationships between the three dependent variables were assessed in order to establish whether there was any underlying psychological

framework that supports the claims of SEL programmes that a rise in emotional literacy leads to a favourable changes in mental health and pro social behaviour.

RQ 4a) what is the evidence for an underlying relationship between emotional literacy and mental health difficulties?

The approach taken in research question 4a was to examine the unique contribution of emotional literacy in predicting self-rated mental health difficulties, after controlling for significant factors identified in the prior analysis (Research questions 1,2 & 3), including the effect of pro social behaviour.

A single level analysis (looking only at pupil level factors) was used given the lack of school level effect. Results indicated that self-rated emotional literacy does significantly contribute to predicting self-rated mental difficulties, after other significant factors have been accounted for (see Figure 6.4). This result implies that there is indeed a relationship between emotional literacy and mental health.

In regard to this finding, it is important to examine the magnitude of the relationship, not only between emotional literacy and mental health, but also in regard to the relative contributions of the other predictor variables in order to assess its relative contribution. The unique contribution of emotional literacy in predicting self-rated mental health is of a reasonable magnitude, accounting for approximately a one half of a point decrease in self-rated mental health for every one point increase in emotional literacy.

In comparison to the other variables included in the model, it is shown that emotional literacy as a predictor of self-rated mental health difficulties compares with gender in regard to magnitude ($\beta = 0.618$), but is a weaker predictor than FSM eligibility ($\beta = 0.656$) and SEN provision ($\beta = 0.717 - 0.949$). The importance of establishing a significant relationship between emotional literacy and mental health after other factors have been controlled for is discussed in section 6.6. The role of emotional literacy in predicting mental health after other factors have been controlled for is shown in Figure 6.4.

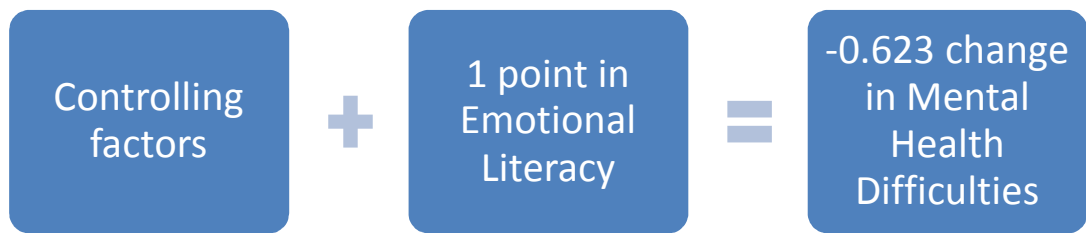


Figure 6.4 Single level regression showing the contribution of emotional literacy to mental health after controlling for other factors

RQ 4b) what is the evidence for an underlying relationship between emotional literacy and pro social behaviour?

The approach taken in research question 4b is identical to the previous analysis of research question 4a, with the exception that the dependent variable of Time 1 mental health score was replaced with Time 1 pro social behaviour score, and that therefore, self-rated mental health score was then represented as a control variable, along with gender, FSM and SEN provision. In this way, the unique contribution of emotional literacy (after controlling for the aforementioned factors) upon pro social behaviour scores could be assessed.

Results indicated that there is a significant relationship between emotional literacy and pro social behaviour scores, after controlling for the other predictor variables, ($\beta = 0.123$). This result is represented diagrammatically in Figure 6.5.

In contrast to the previous research question, the strength of the relationship both in regards to emotional literacy, and the comparative strength of the relationship in regards to the other variables, was far weaker, even when accounting for the differences in the scale of the tools. As the results represent unstandardized coefficients in order to show the effect of variables as a raw score, consistent with MLM, the two results for research questions 4a and 4b cannot be compared without first accounting for the differences in the scales of the two scores.

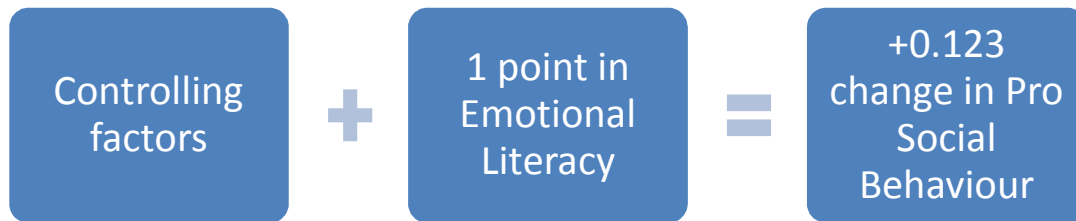


Figure 6.5 Single level regression showing the contribution of emotional literacy to pro social behaviour after controlling for other factors

6.3.7 RQ5 What are the qualitative indicators of impact?

In line with the pragmatic, mixed methods methodology adopted for the current study (see section 4.3), qualitative comments from a select number of case study schools were included as part of the analysis into the impact of secondary SEAL. Qualitative comments were compared with the statistical findings in an attempt to add rigour to the overall study, and also provide the additional benefit of providing an alternative format of data, which adds context and a connection to the statistical models.

Using the content analysis approach (as described in section 4.5.2) the qualitative data from visits 4 and 5 were arranged into appropriate categories and subcategories (see section 5.12), a summary of which is now presented.

Impact on behaviour and social skills

Qualitative comments categorised as “school level impact” within “impact on behaviour and social skills” (see section 5.12) supported the quantitative findings, namely a lack of observable change of behaviour at the school level overall, however there were some notable discrepancies within each theme. There is some suggestion in three of the case studies schools (CS 6, 7, 8) that behaviour had changed as a result of the SEAL programme. However, these comments were not representative of the majority of the data, suggesting that isolated comments supporting a change in behaviour and social skills as a result of SEAL are not reflected by the majority of the staff interviewed, both across the sample, and within the individual schools. A more substantial indication of the data was support for an identified positive change in particular individuals or small groups. Several sources within five case studies schools (CS 4, 5, 6, 7, and 10) were able to provide specific examples of a positive change in social skills, behaviour and pupil-teacher relations

in individuals or small groups who previously were reported to have difficulties in these areas. This result is of particular note, as improvements (small or large) within specific groups or an individual (especially within individual schools) is an effect that would go undetected by the quantitative analysis. In comparison to the two quantitative approaches, it is interesting to note that SEN provision at school action plus is a significant predictor within the statistical models, which may represent an equivalent finding in regards to the qualitative comments. The implications of disproportionate improvements in high risk groups are discussed in section 6.5).

Impact on generalised favourable outcomes

In regards to school level impact, there appeared a larger number of positive comments supporting a generalised school impact as a result of SEAL, but with no specific reference as to how the school has improved (see section 5.11).

Several specific examples of positive overall impact were provided at the pupil level, and SEAL leads in several schools (CS3, CS4 & CS8) observe an increase in the use of 'emotional vocabulary' as well as a decrease in the number of internal exclusions (CS8, CS10). The SEAL lead from CS5 also indicated that SEAL was responsible for improvements in ability to work in teams, which had a direct impact upon academic achievements. Comments in regards to generalised impact were consistent with the claimed favourable outcomes of the SEAL programme, and provided several examples in which SEAL may be providing a beneficial impact, beyond the case study schools (e.g. within the larger quantitative sample) but are not directly measured in the quantitative analysis. This point is discussed further in section 6.7.

Lack of impact

Five case study schools were cited as having at least one member of staff indicating a lack of observable impact of the SEAL programme. Although this finding is consistent with the quantitative analysis, it is important to note the various causes attributed to a lack of observable effect. Only one case study school (CS2) indicated that a lack of impact was associated with a corresponding lack of implementation. The difficulty with implementation is briefly discussed in section 6.7.3. Three other schools (CS7, CS8 & CS10) cited difficulty in establishing an appropriate measure as a reason for lack of observing change, although schools were issued feedback in

regards to the wider qualitative analysis. The reliability and validity of the tools used is an important aspect of the study (see methodology section 4.7) and is discussed further in section 6.7.2.

6.4 Discussion of the findings in relation to previous research

The impact of the SEAL programme is assessed in relation to the previous literature using an adapted version of Weissberg et al's (1997) pre-requisites for programme impact. As Weissberg et al state, a programme can only be considered successful if each pre-requisite is passed without reservation (see Table 6.2). Each stage will be assessed in relation to previous literature in attempt to critically assess the reasons for the results reported in chapter 5.

Pre-requisite	Difficulty achieving Pre-requisite	Section
Theoretical/ conceptual	There is some difficulty in the underlying psychological or theoretical framework of a programme that suggests skills are not teachable or cannot be learnt	6.6
Design Process &	Although the underlying framework suggests skills are teachable or can be learnt, the design of the programme does not correctly identify the best way to do this, impairing its ability to actively change such skills	6.4.3
Implementation	Although the programme design is appropriate for the delivery of skills, individual adaptations or a lack of understanding by individual schools means the design of the programme is not implemented faithfully, and impairs the impact of the programme	6.7
Rigour of evaluation	A programme must be evaluated with sufficient rigour that results either supporting or refuting the effectiveness of the programme can be accepted with confidence	6.7

Table 6.2 Pre-requisites for successful impact

6.4.1 Effectiveness of SEAL in comparison to prior SEBS evaluations (design and process)

SEAL and SEBS

When comparing the findings of the current study to prior research, the two most relevant examples are the UK evaluations of the Social, Emotional Behavioural Skills (SEBS) programme, the pre-cursor to the SEAL programme (see section 3.5) carried out by OFSTED (2007) and NfER (Smith et al., 2007).

Both the OFSTED and NfER studies were primarily qualitative in nature, and therefore are most easily compared with the qualitative reports of impact in the current study (see section 5.11). Several commonalities are present. For instance, a common factor between all three studies was the general themes identified in relation to pupil level impact. All three studies show that teachers and school staff reported:

- Perceived improvements in interaction between pupils and staff
- Perceived positive changes in attendance and exclusions
- Perceived positive changes in behaviour

As SEBS was the pilot version of the SEAL programme, there is little surprise in identifying common strands between the evaluations, especially as one case study school participated in both the current study and the prior evaluation by OFSTED.

The current study and the evaluation by OFSTED (2007) also identified a discrepancy in opinion between the impact of the programme on a whole school environment, and specific improvements within particular target groups or individuals, suggesting that SEAL has an additional beneficial effect on behaviour in regards to specific high-risk groups or pupils. This is a curious finding given that the SEAL and SEBS programmes were designed as 'universal promotion' programmes, and subsequently do not provide materials or guidance for targeting specific groups or individuals. It is possible that such an effect is as a result of increased awareness of pupil needs by staff, leading to greater attention and effort devoted to a particular

group of pupils. Alternatively, high risk groups and individuals may be more amenable to the effects of the intervention, and whereas the quantitative impact of differential effects are discussed in section 6.5, subsequent differences in qualitative comments of the current study are such that the findings are more likely a result of staff impressions than actual pupil level change.

One major difference between the studies is the reported magnitude of the effects. Although Smith et al (2007), in line with the current study, identified difficulty in attributing the perceived changes to the result of the SEAL/SEBS programme specifically, neither Smith nor OFSTED report any negative cases (e.g. teachers and staff refuting any effect over the duration of the programme), contrary to the results of the current study (see section 5). Smith et al. provide a frequency the responses supporting an effect of SEAL: "*Over three quarters (62 respondents) said that the pilot had a 'considerable' or 'some' impact on the development of SEBS in pupils*" (Smith et al., 2007, p67). This magnitude of positive responses in Smith et al study is far greater than the reported comments in section 5.11, which indicates a marginal rather than majority support for SEAL impact. Therefore, although all studies identified that staff and teachers perceived an effect of the programme within similar areas, (namely pupil-staff interaction, behaviour, and differential impact for at risk groups and individuals), the frequency and magnitude of these effects differ in respect to the findings of the current study. There are a number of factors to consider when attempting to reconcile this discrepancy:

The timescale of the current study is significantly longer than either evaluation by OFSTED or Smith et al. Whereas the OFSTED study (2007) was conducted over one summer term, and the majority of the data collected by the NfER (Smith et al., 2007) occurred within 9 months of the start of the project, final interviews for the current study were conducted two years after SEAL implementation and the start of the project had begun.

Attrition in the quantitative data (see section 5.2) is strong evidence of a decreasing interest in the SEAL programme over the course of the study, and as the qualitative data used in the current study was collected during the latter part of the study (V4 and V5) (see appendix 1), approximately 18-24 months after schools started implementing SEAL, it is possible the comments reflect the most potential change in pupils, but also an increasing pessimism or fatigue in pursuing the programme. This is especially true given the number of interviews between NfER and the current studies are of similar volume and scope, but the time at which they were conducted is much

later from the start of the project for the current study. This potential finding has significant implications in regards to the maximum impact the current design and the SEAL programme can have on pupil skills. As the findings from each the three studies form an approximate timeline of staff responses, it appears that fatigue becomes an increasing barrier to successful impact of the programme, as comments from the two prior studies highlight the importance of staff in ensuring: “*Sustainability of the SEBS (secondary SEAL) programme*” (Smith et al., 2007, p74). Given the results from the current study indicate decreasing staff interests, as evidenced by the lesser magnitude of positive response, it is logical to propose a relationship between staff commitment and pupil impact. In this way, the current design and processes of SEAL reflect the ‘maximum potential’ for pupil level impact, as without further adaptation or support, staff attitudes are likely to decline further and subsequently lessen any future impact on pupil skills.

Another discrepancy is the analytical rigour applied to each of the studies, as there is no evidence of a negative case analysis in either the study by NfER or OFSTED. This form of methodological rigour is adopted in the current study and subsequently identifies cases in which no impact or negative impact has been recorded. Although this indicates a more negative assessment in regards to the qualitative impact of SEAL, it is arguably more accurate, as negative case analysis and data triangulation are two methods of qualitative data validation missing from the OFSTED and NfER study. This is additional evidence supporting a decline in staff interest and enthusiasm for the SEAL programme which, in part, does provide a possible explanation for the results reported in the quantitative aspect of the current study.

One further difference for consideration is the additional aid received by the schools participating in the evaluation by OFSTED, as reported in the following quote: “*The university of Sussex worked with eight of the pilot schools*” (Ofsted, 2007, p9.). The authors of the OFSTED study delivered advice and support to the schools involved in the research, beyond what would be expected during a national ‘roll-out’ of the programme. Additional aid is likely to impact upon the perceptions of staff, and their ability to produce meaningful changes, compared to the comments of the schools within the current study, who received no additional help. Such an ‘efficacy’ effect is noted in similar studies where, regardless of services offered, improvements are seen as a result of outside help, with lower or even null results recorded when no additional aid was delivered (Shucksmith et al., 2007). Although aid with the implementation and assessment of the programme indicates the potential success of

the design and process of the programme, the result is less valid when compared with evaluations classed as 'efficiency', which do not provide additional help in the schools involved in the evaluation.

The lack of additional aid, the extended timescale of the project and the inclusion of outcome measures assessing pupil outcomes highlight the fact that the current study serves a different purpose to that of previous studies by OFSTED and NfER. The aim of the current study was to assess the impact of SEAL on favourable outcomes, independent from the perceptions and opinions of implementation. The difference in approaches is emphasized by Smith et al: "*as already highlighted much of the monitoring of the pilot to date had concentrated on its implementation rather than the outcomes*" (Smith et al., 2007, p67). Therefore, assessing the rigour of the present study in relation to the current status of UK based SEL research is extremely problematic, as for the reasons discussed in section 3.5, the studies by OFSTED and NfER are typical of current UK evaluations that have typically favoured alternative methodological designs when compared to the current study, typically assessing reflections, opinions and processes of end users, rather than providing definable, measureable outcomes (Coleman, 2009). As argued, these approaches may reflect the less explicit, and more ethos orientated approach to SEL within the UK. It is clear from the SEAL guidance, that many of the favourable outcomes are expected to be generated from examples such as 'supportive environment' and 'appropriate behaviours' rather than as a result of explicit teaching (Department for Education and Skills, 2007a) (which are more typical of US-based SEL programmes). Therefore, there is a potential argument, that the results of the current study are not comparable, or have little extra to offer when compared to prior assessments of the SEAL and SEBS programme evaluations (Ofsted, 2007; Smith et al., 2007). However, there are several key findings worth repeating:

- The role of attrition and increasing cynicism / disinterest in potential factor in influencing SEAL impact should not be underestimated
- Given the comments citing generalised impact, there may be a beneficial impact of the SEAL programme that is not identified using the current tools within the study (see section 6.7)

6.4.2 Effectiveness of SEAL in comparison to other UK programmes

Because of the small number of UK based studies and the preference for assessing implementation and processes rather than outcomes, there are few UK programmes in which to establish norms and to compare with the current study. However, for the few studies that are available, results have tended to show a mixed picture of results.

Emotional literacy

There is limited evidence to suggest positive gains in emotional literacy in primary age based SEL programmes within the UK. Several small and medium scale studies report significant increases in pupil emotional literacy (Downey & Williams, 2010; Hallam, Castle, Rogers et al., 2005; Holmes & Faupel, 2006; Humphrey et al., 2008; Kelly et al., 2004). However, as previously discussed, the inconsistent quality of the studies means that reported results must be treated with caution as several studies suffer from small sample sizes and lack of adequate control groups (Downey & Williams, 2010; Hallam et al., 2006). For the arguably more rigorous studies, effect sizes tend to be more modest, indicating that gains in emotional literacy as a result of SEL intervention tend to be quite small or produce non-significant results (Humphrey et al., 2008), consistent with the results of the current study. Additionally, data indicates that social and emotional skills are located predominantly at the pupil level. This indicates that although schools are able to influence some aspect of pupil's social and emotional skills, the main source of variation is predominantly located within individual pupils. Despite the rapid acceptance and growth of SEL practises, current academic and governmental evaluations have not kept pace, and therefore there are currently no other large scale UK studies using secondary aged pupils to compare the results of the current study as evidenced by Blank et al. (2010) whose systematic review failed to identify any UK studies assessing emotional literacy or pro social behaviours and skills for secondary age pupils.

Mental health

Results reporting the effect of SEL programmes on pupil's mental health are equally sparse and/or focused at the primary age. However, some studies do provide some limited comparison to the current study. For instance, a study by Lee et al (2009)

which used the SDQ to examine approximately 1,500 primary aged pupils, found a significant reduction in SDQ total difficulties score ($d = 0.39$) as a result of the primary schools implementing the place2be programme (*Place2be: Making a Lifetime of Difference to Children in Schools*, 2009). Curtis and Norgate (2007) report a similar effect using the sub-domains of the SDQ (emotional symptoms, conduct problems, hyperactivity, peer problems) as a result of primary schools implementing the PATHS programme, although this particular study did not report total difficulties score. However, neither result is directly comparable to the current study, as parent and teacher versions of the SDQ were used (rather than self-report). The results themselves are also questionable as both studies report abnormally high SDQ scores (on average pupils scored within the “borderline” category of total difficulties) before the intervention was introduced. Similar trends are shown with a recent evaluation of primary SEAL small group work (Humphrey et al., 2008), although the reported effect sizes are more modest in comparison the previously cited literature. It can be surmised therefore, that the paucity of good quality, UK based research, extends to evaluations of mental health initiatives (Harden, Rees, & Shepherd, 2001).

Pro social behaviour

A consistent pattern seen within the number of studies assessing changes in pupil's social behaviours. For instance, in comparison to a recent study (one of a small number conducted within the UK), Clarke and Barry (2010) found that for a SEL intervention (Zippy's friends), although small effects were found in relation to rises in emotional literacy and parallel decreases in SDQ total difficulties scores (teacher report), no significant change was reported for Pro-social behaviour scores. This is consistent with the current study which shows pro-social behaviour as the variable with the least change.

Although the cited studies provide some evidence (which is arguably mixed) to which to compare the finding to the current study, they mainly serve to illustrate the factors currently limiting UK based research. Firstly, the overall quality of assessment in the UK (with notable exceptions) is poor as the cited examples use sample sizes as small as one class (Kelly et al., 2004), lack appropriate controls (Hallam et al., 2006) and attempt to make generalizable claims using a preferentially selected sample (Lee et al., 2009). Secondly, for the relatively few UK studies available, the focus is almost entirely on primary aged children (Blank et al., 2010). Therefore, suitable

comparison must be sought in the US literature which is responsible for the bulk of literature available in this area.

6.4.3 Effectiveness of school SEL programme in comparison with the US literature

Meta-reviews

In order to compare the results from the current study to other evaluations which report definable outcomes (rather than processes of implementation or perceptions of end users), there is an advantage to considering the findings from a series of recent meta-reviews; a collection of studies which assess a series of SEL programmes on the basis of their impact on social and emotional skills, mental health, and positive social behaviour. As previously mentioned, the bulk of published results originate from US programmes, and typically involve reporting pre and post effects of interventions (rather than reporting process and implementation as with UK based studies), which makes them both suitable for inclusion within meta-reviews as well as for comparison with the current study.

In one of the most recent and largest meta-analysis of school based intervention studies (207 studies, with a total of approximately 288,000 students), Durlak et al (in press) reports an overall effect of both primary and secondary aged students demonstrating enhanced SEL skills as well as lower levels of emotional distress and higher levels of positive social behaviour following intervention of SEL based programmes. The most noteworthy impact was on pupil's SEL skills, as Durlak et al. report an effect size of $g = 0.60$, which is indicative of a large, meaningful change in pupil's socio-emotional outcomes (Cohen, 1992). Significant, but more modest sized effects were reported in regards to impact upon students emotional distress (the closest category to the measure of self-rated mental health difficulties in the current study), $g = 0.25$, and the overall impact of SEL programmes on positive social behaviour, $g = 0.24$.

In comparison to the current study, it appears at first glance that SEAL is largely ineffective in impacting upon pupil's emotional skills, mental health and pro-social behaviour. An immediate interpretation might suggest issues of transferability between UK and US programmes and the methods chosen to assess them. Several authors (Coleman, 2009; Craig, 2009) have noted a discrepancy in the methods by

which US and UK programmes attempt to influence pupils' social and emotional skills. US initiatives typically favour explicit teaching criteria and overt learning objectives (see Table 3.2) whereas UK based approaches to date have favoured a more holistic or nebulous approach which attempts to alter whole school environment and ethos (e.g. SEAL). As discussed, it is possible that the measurement of explicit pupil outcomes is an inappropriate measure for ethos based programmes, however it should be noted that although the design of US and UK programmes may differ, the expected outcomes do not. Both US and UK programmes cite beneficial changes in pupil level skills as favourable outcomes of programme implementation. In this way, despite alternative strategies for impacting pupil level outcomes, SEAL can be compared with US-based studies. There is however, one additional caveat in regards to cultural transferability. There remains the possibility that cultural differences within the school systems themselves (rather than an intervention) affect the malleability of pupil outcomes, and it has been suggested (Craig, 2009) that the UK system is less amenable to altering pupil's social and emotional skills. Whereas this argument may interfere with the interpretation of US initiatives being trialled in UK schools without appropriate adaptation or 'cultural translation' (e.g. Kelly (2004) and Seligman (Seligman et al. 2009)), this argument should not apply to 'home grown' or 'native' interventions. This is because, according to Weisberg (1997), the design and process of an initiative should include any alterations required for the wider context or prevailing ethos in which it is to be implemented.

In summary, due to a lack of comparable research in the UK, US initiatives are required to compare the results of the current study. Although there are concerns in regards to cultural transferability, both US and UK programmes have the same intended outcomes, and therefore both attempt to alter pupil level skills. Any cultural difference in the school system itself should be accounted for within the design of the SEAL programme, and is therefore a factor already considered when comparing the effects of US programmes.

Having considered the issue of cultural differences, there still remains a discrepancy in the magnitude of the reported effects, between the current study and the recent meta-review (Durlak et al., in press). Although meta-reviews have many advantages over individual or smaller scale studies, especially in relation to the examples from the UK cited in the previous section, and provide a basis on which to compare results of individual studies, there are a number of limitations in interpreting the results from Durlak et al. The most principle limitation is a lack of consensus when compared

with prior meta-reviews, which vary quite widely in respect to their reported effect sizes. For instance, whereas some meta-reviews report marginal effect sizes in the range of 0.17 (Horowitz & Garber, 2006), other studies report much larger effects, ranging from 0.25-0.3 (Losel & Beelmann, 2003; Wilson & Lipsey, 2007), or higher (Payton, Weissberg, Durlak et al., 2008)

Meta-reviews are comprised from a pool of existing literature, and whereas this typically has the advantage of enhancing methodological rigour by creating averages using larger samples, this benefit is arguably counter-productive when applied to the area of SEL. This is for two reasons. First, as discussed in section 3.4, the diverse nature of the area makes comparisons of different programmes inaccurate, for instance there is a large variation amongst programmes in regards to specificity of SEL content, typology of intervention and age range included.

Second, as the overall quality of SEL programme evaluations are regarded as poor (see section 3.4.4); large numbers of weaknesses within individual studies are ultimately transferred into calculating overall effect sizes and inflate otherwise authoritative findings, for instance:

- Quality of tools
- Level of assessment (e.g. class level / school level)
- Assessment of demographic factors

These various factors are now discussed in relation to current study.

Specificity of SEL content

As noted in the literature review (see section 3.4.3), the broad classification of what constitutes a SEL programme has been used by reviewers to include an extremely diverse range of programmes with very little actual SEL content (for instance, health programmes, holistic education initiatives and civil/social history modules, see Table 3.2). Whereas the cited meta-reviews exclude the more esoteric programmes from analysis, a large variation in programme design, content and intended outcomes still remain. Therefore, many different programmes with a variety of intended outcomes and correspondingly diverse assessment criteria, distinctly dissimilar from

the current study, are used to create results by which the effectiveness of SEAL is judged. An example of how broadly SEL is defined by one meta-review is shown in the following quote:

“This category includes evaluations of different types of personal, social, cognitive, and affective skills related to such areas as interpersonal problem solving, identifying emotions from social cues, conflict resolution strategies, and coping strategies.”
(Durlak et al., in press, p14)

Therefore programmes whose principle focus is social skills or interpersonal behaviours are included in the review. For instance, the “Facing History” programme (Schultz, Barr, & Selman, 2001) was included as part of the meta-analysis by Durlak et al, a programme already identified as containing a minimal amount of SEL content (see section 3.4.3), which arguably belongs in the list of similar examples of ‘fringe EI’ programmes cited in section 3.4.3. The lack of specificity when defining an appropriate level of SEL content to review creates several difficulties:

Firstly, given such a heterogeneous mix of programmes, lack of a single operational definition and a lack of appropriate measurement tools (Wigelsworth et al., 2010) it is extremely difficult to assess SEL as a unique construct. Therefore, different studies use a range of diverse assessment criteria to assess changes in social and emotional learning, citing changes in violence reduction (Botvin et al., 2006), measures of self-esteem (Borba et al., 2000) and knowledge of the intervention (Darnell & Emshoff, 2008) as evidence of improvements in SEL. In this way, specific programmes with specific focus are used to support evidence for an overall effect; however it appears as the range of programmes included in a review increase, there is a corresponding decrease in their relevance to SEL. For instance, it seems potentially redundant to design a programme to enhance pupil’s emotional management skills by using evidence from anti-violence interventions. In relation to the current study, there is little justification in comparing the results of specific outcome measures (namely, the ELAI and SDQ) with effect sizes generated from such an ill-defined domain. For the reasons noted, there is no indication as to the relative effects of the particular aspects included within the current study as very few programmes use emotional literacy or related measures as part of their design and consequently there is no way to establish whether reported effects include the specific elements of the current study.

A second confusion is created as changes in proximal and distal variables are assessed together. In other words, both direct changes in pupil social and emotional skills and other favourable outcomes changed as a *result* of a rise in emotional literacy are recorded as one. This has the outcome of being unable to specify how pupil's skills change as a result of an intervention, and limit any attempt to establish causality between the direct skills such as managing feelings, empathy, or motivation and more distal outcomes such as improved social skills, reduction in violent behaviour or improvements in academic ability. This limitation is acknowledged by Durlak who states:

"This meta-analysis could not confirm the presumed mediational role of SEL skill development. We could not test if skill enhancement was responsible for other benefits manifested by students such as better social behaviour, reduced conduct problems and improved academic performance" (Durlak et al., in press, p.32)

In contrast, the current study attempts to examine a causal-comparative relationship in regards to direct changes in social and emotional skills and subsequent positive changes in mental health difficulties and positive behaviour by using separate measure for proximal (emotional literacy) and distal (total difficulties and pro-social behaviour) outcomes. The current study also attempts directionality in regards to specific skills (examined further in section 6.6). However in doing so, provides results that are arguably incompatible with the effect sizes reported by less well defined, or 'holistic' meta-reviews.

Typology of intervention

An additional distinction often overlooked is the type or nature of the programmes under assessment. As discussed in section 3.4, alternative forms of programme require differing forms of assessment as well as different expectations of their effect. Several reviewers identify the differential effects of programme type (Adi, 2007; Durlak et al., in press; Wells, 2003; Wilson, Lipsey, & Derzon, 2003). However, the reported results do not always reflect the differential effects of the different types of programmes, and these differing effects are not always reported with the attention and importance they require. For instance, despite the claims of a recent meta-review (Durlak et al., in press) reporting significant effects of $g = 0.60$ (a figure included in both abstract and main body of the report), the appendices of the report suggest a much more modest effect size for interventions classified as multi

component, reporting the figure of $g = 0.12$, a smaller effect size than those reported for changes in emotional distress ($g = 0.25$) or positive behaviour ($g = 0.21$). This is an important distinction as, in reference to figure 3.2, SEAL is considered as a multicomponent programme as it contains elements of both class and whole school approaches. Therefore, even using the broadest definition of SEL, the typology of the intervention is crucial in establishing the expected magnitude of change.

In regards to the effect of multi-component programmes, one recent meta review of primary aged studies (Adi, 2007) reports that programmes classified as multicomponent show the most positive outcomes when compared to class based or targeted interventions. Therefore SEAL would be expected to produce greater gains compared to these classifications of smaller interventions. However, for the programmes reported as multi-component there is a far more expansive and explicit programme design compared to SEAL, including parental involvement (Aber et al., 1998), community outreach (Flay, Graumlich, Segawa, Burns, & Holliday, 2004) and additional targeted counselling (Sanchez, Robertson, Lewis et al., 2001). In a recent study, Miller (2005) reports that in regards to impact upon pupils' social and emotional competence, there is a dosage effect in regards to the inclusion of additional factors (teacher training, community involvement, explicit curricula, etc.) with the most effective programmes being the most intensive, and conversely the least intensive (curriculum only) the least effective. In relation to the current study, one explanation for the lack of significant effect may be the lack of additional components effectively utilised in the current programme design.

Age range

As children grow older, other factors and persons may play more important roles in their lives, and the ethos and nature of their education and schooling changes drastically (Holsen, Smith, & Frey, 2008). Correspondingly, expected effect sizes in particularly emotional literacy, and to a lesser extent mental health and pro-social behaviour are greatly reduced when split by age group (Wilson & Lipsey, 2007). Effect size measures in meta-reviews that focus on pupils aged 7 – 11 are far more modest than those reported by studies that do not make the same distinction. This is an important distinction for two reasons. Firstly, the distinction highlights a discrepancy in this area of research, as although the issue of age is mentioned in several meta-reviews, the drastic reduction in effect is not commonly publicised, magnifying the expected effects of programmes currently operating in middle/ high

schools. Secondly, identifying this issue highlights the extremely small number of studies that produce data for pupils aged 12+, which are virtually non-existent. For the few studies that do exist, and provide a correspondingly robust design the results are far more consistent with the current study. For instance, Holsen (2008) found similar effects to the current study when assessing the Second Step (Steg for Steg) programme in a large sample ($n = 1,153$) of Norwegian children aged 11-12 years of age; namely, a marginally significant impact over one year of the programme, with a very small actual effect. Holsen reports changes between 0.01 – 0.1 in self-rated social competence and behaviour scores, using the Social Skills Ratings System (SSRS) (Gresham & Elliot, 1990). The magnitudes of these results are in line with the most modest of effects reported by meta-reviews and are comparable to the changes in self-rated behaviours reported in the current study. However, very few studies using pupils aged 12+ provide the level of rigour displayed in Holsen's study, meaning the number of actual studies that can be compared on this basis are extremely restrictive.

Methodological considerations

An additional limitation with the field in general, which is subsequently translated into the results published by meta-reviews, is the overall quality of tools used to assess social and emotional skills. As noted in Humphrey et al (in press) there are few choices when it comes to selecting an appropriate tool for assessing social and emotional skills. The impact of this shortage is apparent in one meta-review that reports up to 50% of the tools were not able to meet basic requirements of validity (e.g. strong psychometric properties, appropriate norms and scoring standards). Therefore, there is a serious question as to the validity of reported results in wide range of studies (Durlak et al., in press). Conversely, measures of pro social skills and mental health difficulties have a much more successful history of development, and this means there is a higher availability of tools which a greater level of validation available to researchers (Wolpert, Aitken, Syrad et al., 2009). This may be an additional reason as to why reported effect sizes are more moderate in these areas when compared to social and emotional skills. The ramifications of tool selection for the current study are discussed in more detail in section 6.7.2.

An additional methodological consideration in regards to interpreting reported results is the lack of acknowledgement of the inherent clustering in educational data. This difficulty is closely related to the issue of differing programme typologies, and although null effects of school have previously been reported (Durlak et al., in press),

an analysis that adequately accounts for the difference in assessment between class based and school based interventions have not yet been occurred. This is a fundamental issue in the analysis and interpretation of the lack of school level effects, and although results indicating limited school level contribution to pupil outcomes are reflected in the literature (Durlak et al., in press), it is impossible to determine whether this result is accurate. This is because the magnitude of curricula-based class data is compared with whole school measures as a single group, which is especially inaccurate as it recommended to assume that schools may vary in skills as much as classrooms across individual schools (Kellam, Ling, Merisca, Brown, & Jalongo, 1998). In other words, it is appropriate for any multi-site evaluation to fully account for significant differences in both class and school, depending on the target of the intervention. For studies that do control for the effect of class or school, results are generally in line with the current study, suggesting that majority of explained variance in relation to pupils' emotional literacy and pro-social behaviour and confined to the pupil level (Conduct Problems Prevention Research Group, 1999). Methodological considerations are discussed in further detail in section 6.7.

In summary of the above difficulties, it may be argued that the current field suffers from several severe difficulties that limit the interpretation of published results. Some criticism is true of the majority of individual studies, and is subsequently reflected in larger (seemingly) more robust and authoritative reviews. This issue is not aided by the fact that those results may be published and disseminated regardless of the aforementioned weaknesses which serve to inflate expectations of the effects of SEL programmes. Whereas this is an issue the overall methodological rigour in this particular field rather than necessarily failings of the reviews themselves, publication of high effect sizes means that there is an unrealistically high expectation in terms of expected impact of a programme that falls under the umbrella of SEL. More modest gains are to be expected when programmes are more clearly categorised, especially in relation the aforementioned criteria:

- Specificity of SEL content / programme aims
- Typology of intervention (e.g. class based – whole school, see Figure 3.2)
- Target age range
- Appropriate levels of methodological rigour

For the notable exceptions that do consider the above criteria, gains are reported as modest (Adi, 2007; Shucksmith et al., 2007).

In relation to the current study, far more modest gains are to be expected from a programme that targets exclusively social-emotional skills. It is important to note that, although many programmes cite common links with the work of both CASEL and Goleman (1996) EI appears currently untested as the basis for programme theory (Zeidner et al., 2002). Therefore it is difficult to produce evidence supporting or refuting its practical application in a school based intervention. The suitability for emotional literacy as a theoretical framework in improving pupil skills is discussed in more detail in section 6.6. In regards the results expected from a multicomponent study such as the SEAL programme, although Adi et al. (2007) suggest that some gains are to be expected as a result of such a design, this assertion is based on programmes which offer far more ‘content’ and activity (e.g. parental involvement, community liaison, additional targeted support) than is suggested by the SEAL programme. In this way, there is a suggestion that the design and process of the SEAL programme may be insufficient to achieve larger gains in this regard, however it is again noted, that this observation is based on an extremely small number of studies, as research investigating gains made at 12 years old or more are extremely limited.

One final possible explanation for the marginal effects reported in the current study is the level of methodological rigour applied to the data. Very few studies report effects after controlling the types of variables included in the current study, and many do not use specific tools, or measure with the same level of specificity offered by the SDQ and ELAI. In this regard, methodological issues explain the discrepancy between general accepted increases in pupil skills and the marginal effects of the current study. The issue discussed in relation to assessing SEL learning is captured by Coleman (2009) who states: *“The more rigorous the criterion, the less likely it will be*

that positive outcomes can be demonstrated' (Coleman, 2009 p, 288). In context of the current study, this suggests that the marginal results may easily be a result of specificity to which the data was analysed. However, the current results should indicate to other reviewers a more realistic impression of expected gains when implementing similar programmes in similar contexts. Additionally, it is clear from the descriptive statistics, that the change in mean scores from Time 1 to Time 3 is too small to be hiding any significant gain. Until larger or at least more rigorous studies and reviews which publish the more modest sizes reported in specific types of intervention, unrealistic expectations of programme impact are likely to be maintained.

In attempting to establish reasons for the results, there are two outstanding issues in relation to prior research that need to be considered in relation the current study. It is possible to determine the relative effects of the SEAL programme by examining the differential effects of social demographics factors. This will indicate the relative success of the programme in relation to pre-existing factors and will indicate whether the design and process of SEAL or any other study is affected by these variables. Secondly, there is the issue of underlying ethos. As discussed, despite a wide range of theoretical perspectives, there are no programmes identified using emotional literacy as the basis for affecting pupil level skills and behaviours. This is particularly important, as if emotional literacy is deemed to not to share a relationship with favourable outcomes such as mental health and pro social behaviour, then the design and process of the intervention in rendered ineffective. As one of the research questions was to examine the underlying relationship between emotional literacy and the favourable outcomes of mental health and pro social behaviour, this issue is discussed further in section 6.6.

6.5 Discussion of the socio-demographic variables in relation to previous research

6.5.1 Differential effects of gender

As noted previously (see section 6.3.5), the effect of gender is considered an anomalous result in the current study when compared to previous literature.

The results show that male pupils, on average, reported higher levels of emotional literacy as well as lower self-rated mental health difficulties when compared to female

pupils. These findings are in contrast to several studies investigating gender differences, which report women performing higher scores on tests of EI (Schutte et al., 1998; Mayer, 1999; Day & Carroll, 2004). However, a lack of consensus in some studies (Bar-On, 1997) has led to a call for further investigation in this area (Van Rooy et al., 2005a). Studies reporting gender differences in mental health are also mixed, but indicate a general trend in males reporting higher levels of difficulties compared to females (Green et al., 2004; Marzocchi, Capron, Di Pietro et al., 2004; Shojaei, Wazana, Pitrou, & Kovess, 2009; Van Roy, Grøholt, Heyerdahl, & Clench-Aas, 2006; Woerner, Fleitlich-Bilyk, Martinussen et al., 2004).

Emotional literacy

On closer examination, the direction of gender effects reported in the aforementioned psychological studies is not replicated in assessments of SEL programmes. Potential gender differences in social and emotional learning are difficult to assess given the small number of studies directly assessing emotional literacy. However, for the small number of studies that have measured variables related to emotional skills (e.g. emotional knowledge, emotional vocabulary or emotional competence), no gender differences are reported (Domitrovich et al., 2007; Kam et al., 2003; Kam, Greenberg, & Kusche, 2004). The effect of gender as a result of interventions is not ruled out completely as there is some recent evidence to suggest EI impacts on social behaviour in different ways for boys and girls because of differing effects on the basis of social behaviour (Austin, Farrelly, Black, & Moore, 2007; Barlow, Qualter, & Stylianou, 2010).

Despite difficulties in establishing a direct relationship between gender and emotional literacy, studies do report subsequent differential gender effects on related outcomes after the implementation of a SEL programme (Dolan, Kellam, Brown et al., 1993; Flay & Slagel, 2006; Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999; Hawkins, Von, & Catalano, 1991). In one particular study of the 'positive action' intervention (Flay 2006), it is suggested that identified gender differences in violent behaviour were due to failings in the programme design. The intervention addressed gender specific behaviours, specifically, differences in the types of bullying that occur between boys and girls. For instance, it is accepted that that girls make greater use of indirect means of bullying, such as verbal aggression and social exclusion, whereas boys tended to employ direct means such as physical violence (Lagerspetz, Björkqvist, & Peltonen, 2006). Pronounced gender differences in relation to these

observed behaviours, as well as established gender differences in both mental well-being and pro-social behaviour have led to suggestions for future interventions to consider gender specific curricula material (Cappella & Weinstein, 2006). Although these findings may appear important in regards to interventions with a focus on bullying or violence reduction, when compared to the current study, there is little to suggest differential gender effects in the area of emotional literacy are a result of the design or content of the programme. This is supported by results that indicate gender effects were present before the implementation of SEAL; as this is due to the extremely small change in gender co-efficient (Table 5.12) between the background and full models (including SEAL status as a variable). If the SEAL programme were to have a differential effect on gender, the change in the gender co-efficient between the background and full models would be far larger. Therefore there is evidence to suggest that a gender difference in emotional literacy as a result of programme impact would be unlikely (given a more substantial impact overall). However, on the basis of adult samples, a pre-existing differential gender effect is expected.

In reference to Weissberg et al's (1997) pre-requisites for programme impact, the current results suggest that in regards to design and process, direct gender effects as a result of the programme are not expected on the basis of similar studies. However, sufficient overall impact of the programme has not occurred in order to support or refute this hypothesis.

Mental health difficulties

The current results also shows differential gender effects in mental health scores as, on average, male pupils reported lower self-rated mental health difficulties when compared to female pupils. This is contrary to several large scale studies that report higher values for males when assessing school aged populations using the SDQ across several European and non-European counties (Marzocchi et al., 2004; Shojaei et al., 2009; Van Roy et al., 2006; Woerner et al., 2004). In summary of the cited studies, it is shown that typically boys report higher total difficulties score, by approximately 2.5 points, when compared to their female class mates. However, It is important to note that these differences are reduced to non-significance when comparing only self-report British pupils, aged 11-15 (consistent with the age and type of report of the current study) (Green et al., 2004; Meltzer, Gatward, Goodman, & Ford, 2000). Although accounting for the age, country and type of report does not

fully explain the current findings, as there is still an identified gender effect in mental health difficulties.

As with the case of emotional literacy, the findings from large scale psychological studies are inconsistent with results from SEL programmes, which typically report inconsistent effects. For instance, several trials identify adolescent girls reporting greater depressive symptoms and higher rates of major depression than adolescent boys (Gillham, Hamilton, Freres, Patton, & Gallop, 2006; Petersen, Leffert, Graham, Alwin, & Ding, 1997). However, other trials fail to identify any significant gender effect (Horowitz, Garber, Ciesla, Young, & Mufson, 2007; Lock & Barrett, 2003; Wilson & Lipsey, 2007). Conversely, several meta-reviews of mental health programmes report, overall, females are less likely to self-report mental issues such as depression when compared to their male counterparts (Horowitz & Garber, 2006; Stice, Shaw, Bohon, Marti, & Rohde, 2009). In attempting to explain the inconsistent results in relation to the current study, there are several possible explanations, which fall into one of three major categories; either theoretical, methodological, or as a result of programme design.

When exploring potential issues with programme design, the comments made in regards to emotional literacy are equally applicable to the mental health as gender effects as a result of programme implementation are noted in prior studies (Holsen, Iversen, & Smith, 2009; Holsen et al., 2008). However, as with the measure of emotional literacy, were the current findings as a result of differential impact, this would have been reflected in greater variance explained as a result of including SEAL as a variable in the full model (Table 5.13).

In regards to methodological issues explaining the inconsistent results for gender within the current study, there is an issue with a possible confound with other variables included in the study, namely SEN provision (Lindsay et al., 2006) and there is also evidence to suggest a link between a variety of mental health issues and special educational needs creates a further additional confound (Rose, Howley, Fergusson, & Jament, 2009). A link between mental health and both SEN provision and gender creates a difficulty within the current study as the nature of the analysis means all variables are examined simultaneously. Due to the disproportionate numbers of males receiving SEN provision within the UK education system (see Table 6.3), variance that would otherwise be attributed to gender differences is

effectively already controlled by the bias towards male pupils identified as receiving SEN provision.

	Boys	Girls
School Action Plus	16,600	6,700
Statement	19,900	11,300
Total	36,500	18,000

Table 6.3 Number of pupils at key Stage 4 identified as with statement or school action plus, split by gender (roundend to nearest hundred) (Department for Children Schools and Families, 2008a)

An expected outcome of this bias is that any variation in gender effects is subsequently underrepresented in the current study, which may partially account for the inconsistent findings as other studies do not make the same distinction (other methodological difficulties are discussed further in section 6.7). The differential effects of SEN provision within the current study are discussed in further detail in the next section.

Whereas the magnitude of the gender effect may be explained by methodological issues, there still remains a question in regards to the unexpected directionality of effect. On a theoretical level, it is possible to explain the mixed results in regards to mental health difficulties and gender by clarifying the difference between mental health difficulties and positive mental wellbeing. It is established that boys aged 11-15 are more likely to be diagnosed with a clinical mental disorder requiring intervention or treatment (such as anxiety, mood or conduct disorders) when compared to girls (Green et al., 2004; Meltzer et al., 2003; Meltzer et al., 2000). However, measures of generalised mental health (e.g. generalised anxiety or depression) report similar averages between boys and girls of the same age (Green et al., 2004). This draws a distinct classification between a clinical sample of mental health difficulties, in which there is a bias towards males, and a general measure of population health, in which gender effects are muted. It is arguable that the current study is measuring incidence of mental health difficulties in a non-clinical sample (as only approximately 10% of the current sample would be expected to display mental health difficulties (Green et al., 2004)), effectively averaging the mental well-being within a national population. In this way, it might be argued that whereas males may show higher frequency of being identified with mental health difficulties in a normal population, only small effects would be expected. This is consistent with the small

magnitude of effect noted within the current study. To fully explore the complex relationship of the proposed classification of 'mental health difficulties', further examination is required of pupils with 'borderline' or 'abnormal' (Goodman et al., 1998) SDQ scores (see section 6.9).

6.5.2 Differential effects of level of SEN provision

Results from the current study show that, for pupils receiving SEN provision at school action plus, there was a significant prediction of lower emotional literacy, higher mental health difficulties and lower pro social behaviour scores.

Despite a rarity of research within this particular area, other SEL programmes have reported differential effects as a result of special educational needs. For instance, several studies (Dolan et al., 1993; Eddy, Reid, Stoolmiller, & Fetrow, 2003; Van Lier, Vuijk, & Crijnen, 2005; Vazsonyi et al., 2004) report graduating effects, e.g. the pupils who made the most gains were those already identified with existing social and/or behavioural difficulties. It might be argued that such a result may be expected from programmes that deliberately target at-risk groups. However, in the case of universal promotional programmes (such as SEAL) it does raise the suggestion that the overall marginal impact of the current study may be representative of an adequate skill set for the majority of pupils, as indicated by the differential effects of SEN provision (e.g. aside from lack of an overall impact, there does appear to be additional emotional literacy and mental health needs for pupils already identified with SEN). Lack of similar effects for the 'lesser' category of provision, 'school action' and the correspondingly more severe assessment of needs, 'statement', is difficult to explain within the confines of the current study. There is a limited amount of information recorded as to the particular needs or support received by pupils, and it is therefore difficult to assess what unique differences may be occurring within these groups.

Although compelling, these findings need to be treated with caution for several reasons. Firstly, SEN is a broadly defined category, as even though the level of severity of needs is partially accounted for within the current study; there is no way to differentiate the effects from a variety of very different conditions or categories. For instance, sub categories of SEN include:

- Cognitive and Learning (e.g. Dyslexia, mild learning difficulties, profound and multiple learning difficulties)
- Social, Emotional and Behavioural (e.g. ADHD, social difficulties, behavioural difficulties)
- Communication and Interaction (e.g. Autism, Asperger's, Speech and language difficulties)
- Sensory (e.g. hearing loss, blindness, multi-sensory impairment)
- Physical (e.g. cerebral palsy, spina-bifida, physical disability)
- Medical Conditions/Syndromes (e.g. diabetes, down syndrome, mental health issues)
- Other

Secondly, SEN is measured as a level of provision, rather than an assessment of need. Therefore, the category represents only a broad approximation as to the particular needs of child. It is likely that, in part, the various categories of SEN provision are influenced by wider factors, most notably the amount of pre-existing support within an individual school. An outcome of this distinction is potentially differing results dependent on the nature of the SEN provision and any change in school ethos or climate. It should be noted that school level environmental effects, although posing a difficulty in other studies, are partially accounted for in the current results by taking into account school level variance (which was very low). However, the effects of this may be slightly muted given the small numbers of SEN in proportion to the rest of the school population. However, the existence of SEN within a wider context highlights the third difficulty in interpreting the results of the current study, specifically, due to the nature of the analysis, there is likely a confound effect with other variables. As previously mentioned, it is known that a disproportionate number of both males and non-white ethnic categories are disproportionately represented in SEN figures (Lindsay et al., 2006). The ramifications of methodological limitations such as these are discussed further in section 6.7.

6.5.3 Differential effects of ethnicity

Significant effects were identified for a range of ethnicities, although there was little consistency in regards to the directionality of the effect or the continuity between emotional literacy, mental health and pro social behaviour. Only the ethnic classification of African showed a consistent relationship and direction, as those identified within this category displayed, on average, higher emotional literacy, lower mental health difficulties and higher pro social behaviour. The findings of the current study are consistent with the wider literature as there is evidence to suggest higher mental health difficulties in ethnic subgroups, compared in white adolescents (Green et al., 2004) and other SEL programmes have reported differential ethnicity effects (Cardemil, Reivich, Beevers, Seligman, & James, 2007; Hawkins et al., 1999; Hawkins et al., 1991), where ethnic minorities benefit least from the intervention. However, compared to other socio-demographic variables, ethnicity is by far the most difficult and complex to interpret or analyse, particularly in relation to emotional literacy, due to the lack of published studies in this area. Although research exists to suggest cultural differences in EI (Parker et al., 2005) very few studies exist to determine specific elements or effects. This difficulty is further exacerbated by the complexity and cultural differences between UK and US research. For instance, there are disproportionate numbers of different ethnicities amongst US and UK schools (e.g. there are almost no Hispanic or Latino ethnicities in the UK education system, but can account for 50% or more of US school populations (Vazsonyi et al., 2004)). Also, given the divergent socio-historical origins, there is a gulf of understanding between the implications of what different ethnicities or 'races' (the term more commonly used in the US) represent. As such, there is very little valid comparison of results to be made.

In regards to mental health and pro social behaviour, an additional difficulty is the confound with existing variables, as there is a disproportionate representation of ethnic minorities receiving SEN provision (Lindsay et al., 2006) and mental health difficulties (Green et al., 2004) (see Table 6.4)

Ethnicity	Prevalence of recorded mental disorders
White	10%
Black	8.5%
Indian	3%
Pakistani & Bangladeshi	7.8%
Other	6.5%

Table 6.4 Prevalence of UK Mental disorder by ethnicity (Green et al., 2004)

An additional difficulty is the extremely small sample sizes from several of the ethnic minority categories which, causes difficulties in regards to identified means and variation. Therefore, although there is some evidence to suggest a differential effect of ethnicity, methodological and cultural issues severely limit any conclusion or interpretation. Recommendations to overcome this and other limitations are provided in section 6.9.

In summary, the results of the current study suggest that there are a series of differential effects on the basis of the identified socio-demographic variables. Lack of significant change between the background and full models indicate that the these effects were present before the implementation of the SEAL programme, however, given an overall lack of impact, there is no way to identify whether this particular intervention is capable of producing consistent effects across gender, ethnicity and category of SEN provision. In reference to Weissberg's pre-requisites of impact, there remains a question as to whether the underlying psychological framework of the SEAL programme is an appropriate vehicle for impacting pupil skills. Therefore the relationship between the variables are examined in order to establish whether changes in emotional literacy are associated with changes in mental health and pro social behaviour.

6.6 Discussion of theoretical / conceptual framework (e.g. is there a relationship between emotional literacy and favourable outcomes?)

It has been established that there has been no significant impact of the SEAL programme. This is evidenced by very little additional variance as a result of including the SEAL status variable in the analysis (the full model). Various design issues have been identified in relation to other studies (such as typology, inclusion of parents/community, explicit curriculum), and whereas these factors indicate there are certainly issues with the design and process of the SEAL programme, comparison with other programmes indicates that SEAL's theoretical framework is also untested.

This is because, despite the common origins of Goleman (1996) in the materials from both SEAL and CASEL, very few current programmes have appeared to fully endorse such underpinnings to the same extent as the SEAL programme and therefore do not contain the same level of emotional literacy content within their programme materials (see Table 3.2). As there are no programmes which use emotional literacy as an underlying framework for programme design to the same extent as the SEAL programme, the current study represents an opportunity to examine an arguably untested theoretical background to improving pupil's skills and behaviours. This is reflected in the follow quote by Durlak who states;

“Because there is no standardized approach in measuring personal and social skills, there is a need for theory-driven research that not only aides in the accurate assessment of various skills but also identifies how different skills are related” (Durlak et al., in press, p. 30)

As the discussion of the current results so far indicate that there is little evidence to suggest pupil gains as a result of the format of the current programme (e.g. pupil skills have not significantly improved over the duration of the study), there is a question as to whether the underlying framework of the SEAL programme is a valid method by which to improve pupil outcomes. This uncertainty is reflected in RQ 4 which asks:

What is the evidence for an Underlying Relationship between:

- a) Emotional literacy and Mental Health Difficulties?
- b) Emotional literacy and pro social Behaviour?

It is important to note that in order to examine the underlying psychological relationship between emotional literacy and the outcomes of mental health and behaviour, it is advantageous to exclude any confounding effect of the SEAL programme (despite its non-significant outcome). Therefore the proceeding discussion is based on the results gained from analysing the Time 1 data across the whole sample (prior to any implementation of SEAL). It is at this point SEAL and comparison schools should not differ in respect of the average amount of school level of intervention into pupil skills (although the effects of SEAL can be controlled for by using baseline data, it is impossible to control for an effects for other school-based initiatives. Instead, it is assumed that any potential effect are distributed randomly across the full sample). It is equally important to note that although this data was

collected *prior* to the implementation of SEAL, it was analysed *subsequent* to the multi-level models presented in research questions 1-3. This allowed significant influencing factors to be identified and controlled for within the current model, in order to more accurately identify the unique contribution of emotional literacy towards pupil mental health and pro social behaviour, beyond those factors already identified such as gender, socio-economic status and special education needs (see Table 5.15 and Table 5.16).

In summary of the results, the current study found that (after socio-demographic factors had been accounted for) there was a statistically significant relationship between emotional literacy and mental health scores, as well as significant relationship between emotional literacy and pro social behaviour scores. However, there was a distinction between the magnitudes of the two identified relationships, as emotional literacy was responsible for a larger associated change in mental health than pro social behaviour, even after differences in the unstandardized co-efficients had been accounted for. Therefore, the current results suggest that, independent of any particular SEL programme or intervention, there is a valid underlying relationship between self-rated emotional literacy and self-rated mental health difficulties, and to a lesser extent, self-rated pro social behaviour.

6.6.1 Mental health difficulties

In regards to mental health, there is evidence to suggest that the findings of the current study are consistent with the existing literature. In a meta review of 44 studies, Schutte (2007) found a consistent relationship between EI and mental health, indicating that, on average, emotional intelligence explained between 5% and 9% of the variance in mental health scores. However, these findings were based on an extremely limited number of tools, (the EQ-I, Trait Meta Mood Scale, or scales of emotions), which have been criticized previously on the grounds of a lack of incremental validity, and are instead possible proxies for measures of personality (Petrides & Furnham, 2001; Roberts et al., 2001). This is consistent with more modest findings when using ability or performance measures (Brackett & Mayer, 2003; Trinidad & Johnson, 2002), however, the smaller number of studies using these types of scales means that results are generally more inconsistent (Bastian et al., 2005) when compared to findings using mixed models (such as those listed in Schutte, (2007). A caveat to interpreting this finding is that there is no similar

published evidence supporting this relationship in adolescent or child samples (Humphrey et al., 2007; Qualter et al., 2007), although there is some evidence to suggest those with clinical mental health difficulties may reflect earlier childhood problems (and therefore this evidence supports interventions designed to promote mental health) (Maughan & Kim-Cohen, 2005). Despite this limitation, this is important finding in respect to the current study, as it draws a distinction between self-reported impressions of change, and measures of actual ability, as current results suggest if self-rated competency is regarded as modest, there is unlikely to be any substantial change in actual performance.

A more critical insight into the relationship between emotional literacy and mental health is provided by Ciarrochi (2002) who suggests that EI acts as a moderator between stress and mental health, as significant correlations were found between participant's abilities in managing emotions and handling stress. The study by Ciarrochi produces two important points in relation to the current study. Firstly, Ciarrochi suggests that there are varying contributions from the different domains that make up EI, as 'managing one's own emotions' was the only domain significantly correlated with self-rated levels of stress. This suggests that studies utilising uni-dimensional measures of emotional literacy (including the current study) may be inaccurate as any effect may be masked by less relevant domains. Although the lack of specificity in EI has already been discussed (see section 2.5.1), it is worth noting in relation to the current study, as there are implications in interpreting the results. For instance, a domain specific or ability based measure may yield alternative results. Secondly, Ciarrochi suggests that EI is effective only as a mediator or 'buffer' for negative emotional states or experiences. Whereas the causality of such a relationship is questionable (e.g. are events considered negative due to 'low EI' or do individuals self-rate low EI due to highly stressful or negative events?), it is important to note that in this context, the relationship between EI and mental health is considered valid only in situations of negative emotion, or with individuals who are already 'vulnerable'. For instance, those identified with mental health difficulties (Gardner & Qualter, 2009; Gardner, Qualter, & Tremblay, 2010). It has already been established that mental health difficulties can be considered conceptually different from 'positive mental wellbeing' (Coleman, 2009), and although 'high EI' is associated with happiness and satisfaction (Furnham & Petrides, 2003) there is no evidence to suggest that these opposing scenarios are part of a singular continuum. To clarify, consider the following scenario:

A pupil receives a low exam result and is filled with feelings of anxiety and sadness. Being emotionally intelligent, the pupil reasons that the best way to manage their emotions would be remain motivated with school work to ensure better results next time

Alternatively:

A pupil receives a high exam result and is filled with feelings of joy and happiness. Being emotionally intelligent might aid the pupil in recognising the reasons for their feelings, but does not change their behaviour as they are already performing as desired

The two scenarios highlight the varying importance of emotional literacy in a school setting, as pupils who are already content with aspects of the school environment have less of a need to draw on their emotional skills.

Although the current findings do not refute improvements in emotional literacy relating to improvements in mental health and behaviour, it is possible that a larger magnitude of effect may be detected in selective samples with more vulnerable needs, such as those already experiencing social or emotional difficulties. A more accurate interpretation of the reduced impact of EI, as mental health is established is show in Figure 6.6.

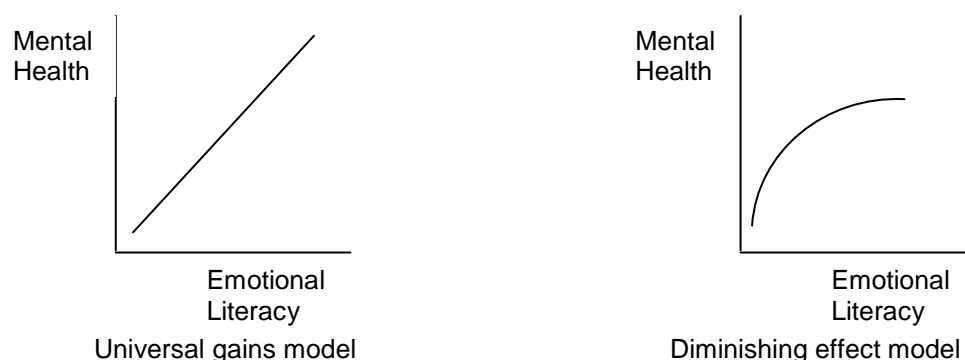


Figure 6.6 Comparison of universal gains and diminishing effects models

Universal Gains – Assumes a universal linear relationship between emotional literacy and mental health. In this scenario, those with ‘average’ or ‘high’ levels of emotional literacy would expect correspondingly high mental health.

Diminishing Effects – Suggests that the contribution of emotional literacy towards mental health diminishes as a person reaches ‘average’ levels. In

this scenario, emotional literacy would be expected to aid 'at risk' groups, but would have a decreasing effect on an 'average' population. Current results suggest evidence for a diminishing effects model (as can be seen in appendix 5). Plotted scores, shown in appendix 5 indicate differential scores for a small sub-group of pupils scoring very low on the SDQ and ELAI. The 'tailing' of individual scores at the bottom end of the graph is indication of a 'curvi-linear' relationship between variables. There is some literature to support the identification of individual differences in sub-groups. For instance, as a result of an investigation into borderline personality disorders and EI, Gardner & Qualter (2009) suggest the design of intervention programmes to specifically target those identified as deficient in EI. However, the authors also note the lack of research in taking this approach. On inspection of the results, there is no evidence to suggest any negative effect of high EI on mental health, as suggested by other authors (e.g Craig, 2009) or evidenced by a recent meta review comparing EI and performance (Druskat & Jordan, under review). Pro social behaviour

6.6.2 Pro social behaviour

In regards to the link between emotional literacy and pro social behaviour, the current results indicate a significant relationship between the two variables although it appears that the strength of the relationship is lower when compared to mental health. Although such an interpretation is consistent with the results, a stronger relationship would be expected on the basis of the common overlap between the two concepts given that social skills is considered to be one of the sub domains of the construct of emotional literacy (see Table 2.2), and therefore a strong association with a measure of pro social behaviour would be expected. As with the case of mental health, this finding may represent issues with the specificity of the construct, as less relevant sub domains may mask an effect. An alternative explanation for this result is the difference in the way social behaviours are defined in the SDQ and the ELAI. It is possible that the two tools are measuring the difference between having social skills and the willingness to engage in pro social (e.g. helping) behaviour. In the case of the ELAI, social skills are defined as "*strategies, tactics and behaviours*" used to influence others, including "*appropriate eye contact, facial expressions, tone*

of speech...smiling... asking for help" (Southampton Psychology Service, 2003 p.13), in other words, self-rated measure of ability or competence. On the other hand, the SDQ sub-domain of pro social behaviour is formed with questions such as "*I am kind to younger children*" and "*I often volunteer to help others*", which indicates a willingness to engage in pro social activity. Therefore it might be argued that whereas the ELAI measures an individual's perception of their *ability* to engage in social behaviours, the SDQ measures their *frequency* in engaging in pro social behaviours. This interpretation is consistent with the stronger relationship identified with mental health difficulties and emotional literacy, as there is no need to consciously enact behaviours related to interpreting one's own emotional state when compared to the need or drive to engage with others. This argument supports the assertion that an ability in social skills is needed to apply pro-social behaviour (consistent with the current results), but suggests a more conservative relationship if used as a vehicle for positive behavioural change. This is because the results suggest that social skills are not a universally positive behaviour mechanism. Such assertions are not readily supported in the literature, as (mentioned previously) there is a lack of published evidence involving adolescents. Unlike mental health, the topic of behaviour is less applicable to adults, meaning there is less interest and opportunity to produce wide scale studies in this area. However, there is some limited evidence to suggest that within certain circumstances, high levels of social skills may be counterproductive as individuals may use their abilities to influence others for purely selfish gains (at the expense of others) (Bereczkei & Paal, 2007), although this effect has not yet been recognised in child samples (Austin et al., 2007; Barlow et al., 2010).

An additional explanation for the current results is possible oversimplification of the relationship between emotional literacy, mental health difficulties and pro social behaviour. Theorists of mixed models of emotional intelligence, namely Goleman (1996) Bar-On, (2007), and subsequent authors and supporters of SEL programmes (such as Weare (2004)) cite a causal relationship between emotional intelligence and the range of favourable outcomes including better mental health and behaviour. This is evidenced by the SEAL programme, which states:

"The underlying causes of difficult behaviour or persistent absence are often emotional or social, and focusing on these, rather than on behavioural outcomes, enables staff to respond more effectively" (Department for Education and Skills, 2007a p. 11)

However, proposed causal relationships have previously been based on correlational evidence, and there is experimental evidence in related fields to suggest a series of interactions between various factors. For instance, there is an observed relationship between depression and social skills in adolescents (Lara & Klein, 1999) that is theorised to be caused by an interaction between mental health and social skills. It is proposed that this link forms as a result of a lack of social skills in depressed persons reducing positive responses from peers, thereby impoverishing further interactions, and hindering any potential recovery from depressive symptoms (Joiner & Coyne, 1999). This is consistent with some SEL programmes which use social skills training to reduce depressive symptoms (Segrin, 2000). Further evidence suggesting a link with the skills associated with emotional intelligence is the identified interaction between an ability to manage emotions and the amount and quality of social support a person receives (Ciarrochi, Chan, & Bajgar, 2001a). As noted within the same study, causality between mental health and EI is not strictly determined. Therefore, there is enough evidence to suggest that the current results may indicate a much more complex relationship between EI and its favourable outcomes than proposed by EI theorists or SEL programme authors (including the SEAL programme). The differences in these two approaches are shown in Figure 6.7.

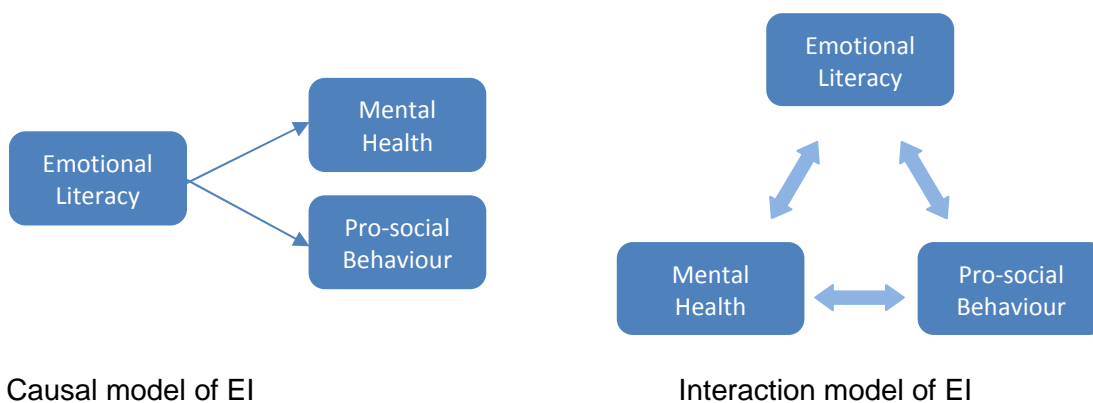


Figure 6.7 Proposed causal and interaction models of emotional literacy

Causal model – A directional relationship is proposed by the causal model. Emotional literacy is seen to be the contributing factor to both mental health and pro social behaviour. Results imply a strong relationship between emotional literacy and mental health compared to emotional literacy and pro social behaviour.

Interaction model – An interaction between the three factors is suggested by the interaction model. Instead of emotional literacy causing changes in mental health and pro social behaviour, it is suggested that there is an interaction between all three factors. Such a model would explain the small amount of unique variance contributed by individual variables shown in the current study.

Despite the casual relationship suggested by the SEAL materials, an interaction model appears more consistent with the results from the current study. This is because, by allowing the presence of an interaction between the variables, variance would be shared, leading to a smaller predictive magnitude between the variables of mental health difficulties and pro-social behaviour. Therefore an interaction between emotional literacy, mental health and pro social behaviour is one explanation for the significant, but smaller than expected co-efficients. One major caveat is that the current study does not provide any evidence as to whether such skills are amenable to teaching. In this regard, an interaction model is more favourable, as there is more evidence to suggest that behavioural skills and issues regarding mental health difficulties are responsive to intervention when compared to the lack of evidence supporting the malleability of emotional literacy through direct teaching methods.

In summary, the overall mechanism of change (i.e. increases in emotional literacy lead to improvements in mental health and pro social behaviour) appears valid for both variables; however the magnitude of relationship is smaller than would be expected on the basis of SEL literature. Reasons for this smaller than expected gain include the accounting of differential effects, both on the basis of identified socio-demographic factors, but also on the basis of existing ability. An additional possible cause is the more critical examination of the directionality and causality of the relationship between the variables, which may imply a more complex and reciprocal interaction that previously theorised.

In reference to Weissberg's pre-requisites for successful impact (1989), there is enough evidence to suggest that in regards to the validity of an underlying framework, a relationship does exist between the skills, and there is prior literature to suggest at least some of the skills may be responsive to intervention. However, there still remains the issue of sufficient rigour within an evaluation to ensure results are interpreted with confidence (e.g controlling for confounds).

6.7 Limitations of current study

It is evident from the variety of reservations associated with the measurement and research of EI (see Chapter 2) as well as the numerous criticisms of prior evaluations SEL based programmes (see Chapter 3), that the two fields of theory and practice are fraught with methodological limitations and difficulties.

Whereas the current study has attempted to address these concerns where possible (for example, by the inclusion of a control group, the selection of a nationally representative sample, and the use of a mixed methods design), a variety of limitations still exist. Therefore in order to evaluate the likely impact of the identified difficulties, these limitations are now discussed in relation to their possible influence on the reliability and validity, or 'legitimation' (see Table 4.1) of the results of the current study.

6.7.1 Issues of study design and initial sample selection

There were a number of difficulties encountered in the beginning phases of the study (i.e. the early stages of the study's design and the initial selection and recruitment of participating schools). Specifically, issues regarding the representativeness of the sample, the extent to which comparison schools were a valid match to the SEAL schools, the validity of the criteria used to define a 'SEAL' school, and concerns surrounding the concurrent data collection of both quantitative and qualitative data. Although these matters of contention represent some of the inherent and long standing controversies within educational research, such as the need for a quasi-experimental design (Lagemann & Shulman, 1999), they nonetheless require appropriate acknowledgement in order to assess their impact of the overall quality or 'legitimacy' (Onwuegbuzie & Johnson, 2006) of the final results.

Firstly, there is an issue as to how representative the selected sample of schools was when compared to the national population. As schools were selected to participate in the study on the basis of invitation (see appendix 1), there was an immediate potential bias as to the characteristics or profile of schools who accepted to take part, compared to those who declined, on the basis of their primary interest in assessing social and emotional indicators of their pupils. In other words, as random selection was not possible given that the SEAL programme was a matter of choice between Local Authority and school and rather than that of the researcher, there is an

assumed bias that schools choosing to both implement SEAL and take part in the study had a greater than average interest in SEL compared to schools not implementing SEAL.

This limitation is tempered by the equal possibility that schools not wishing to take part in the current study were engaged in implementing alternative interventions. For instance, a number of UK schools are currently engaged in implementing the PATHS curriculum (Collins, 2009), and therefore would have an equivalent level of interest in SEL, but would be ineligible to take part in an evaluation of SEAL. A form of potential bias must be assumed for the control schools as well, as they were also selected on the basis of invitation and therefore equally had some form of prior interest. In order to assess the possible magnitude of selective bias as a result of a quasi-experimental design, it is worth briefly considering the possible differences between the selected schools and the wider population. It is reasonable to assume that all schools agreeing to take part in the study (including comparison schools) have at least some interest in social and emotional learning or at least the measurement of SEL within their schools. In regards to representing the wider population of English schools, the likely impact of this preference is an elevation or overrepresentation of skills in comparison the wider population as it is likely that schools who declined to take part in the study, do not have the same level of interest, and therefore it would be expected that the measurement of SEL based outcomes in these schools to produce potentially lower results compared to the sample.

Therefore, the likely impact of schools influencing the study on the basis of a preferential interest of SEL would be higher results than those that might be found should SEAL be implemented nationally. Although a potential cofound to this form of study, in the context of the current results, this limitation is not considered to have impacted the results. This is because the ELAI and SDQ scores from all schools at baseline were within normal range as validated by the instrument's authors. Also, given the null results of the current study, such bias being present seems unlikely. An equally plausible alternative is that schools have adopted SEAL due to an initial or growing interest in SEL (and therefore do not have the implied strategies or systems in place compared to the schools in the prior example) or alternatively have been selected to implement SEAL by their LA due to a recognised need for the favourable outcomes listed in the SEAL materials (e.g. better behaviour, reduced exclusions, improved learning, (Department for Education and Skills, 2007a)). In this instance, a likely effect would be the under-representation of results. These scenarios highlight

the inherent variability in sample selection and there is evidence from the case study schools to suggest that each scenario is replicated at least once within the current study (Wigelsworth et al., 2010). Whereas the final sample is considered of sufficient size to account for the specific conditions present in the various scenarios, inability to account for the variation present within a SEAL school means that there remains a difficulty in comparing SEAL schools with their matched comparisons as there is no method to select a similar school on this basis. To clarify, it was intended that the design of the study compared a number of schools actively involved in implementing the SEAL programme with a corresponding selection of comparison schools that matched SEAL schools as closely as possible with the single exception that they were not currently implementing the SEAL programme. However, as previously noted, difficulties were encountered that limited the effectiveness of this design.

Firstly, although collection of additional data in comparison schools would prove too unwieldy in terms of both time, resources and school willingness to provide further information, lack of additional data besides the demographics on which schools were initially selected (see section 4.6.1) meant that there was still a great deal of variation unaccounted for between SEAL and comparison schools. For instance, although attainment, unauthorised absences, size and % of pupils receiving SEN provision and/or FSM provide some indication of common factors between schools, there still remains a range of factors that influence expected levels of social and emotional outcomes that went unmeasured. Examples include the extent to which schools cater for social and emotional learning independently of the SEAL programme (e.g. what other programmes are already in place), the attitudes and opinions of staff in regards to SEL skills or what current procedures were used to handle issues such as disruptive and misbehaving pupils. Although the great deal of unaccounted for variation is a limitation of the study, it should be noted that this is considered a constant across all schools. This is because both SEAL and comparison schools will engage differing amounts of effort, time and resources into policies and practises that may influence pupil level outcomes. Examples include ECM, anti-bullying initiatives, and any additional staff training. Such variation is possibly highlighted by the qualitative results showing an extremely large variation in the extent to which schools were actively involved in implementing the SEAL programme, with at least one school showing an absolute minimal engagement with the SEAL materials. CS2 was highlighted in the qualitative analysis by the comments of the SEAL lead who declared that lack of SEAL impact was attributable to a lack of implementation. The

outcome of this variation is a blurring of the distinction between SEAL and comparison schools, as it becomes difficult to establish what precise criteria identifies a school as SEAL, beyond an initial willingness to engage with the materials. This presents a potential scenario where there is as much, if not more interest in SEL occurring within some comparison schools compared to their SEAL counterparts. Whereas a possible outcome of this would be a lack of 'SEAL effect' on the basis of methodological difficulties rather than on the level of effect due to the programme, the potential impact of this effect is mediated by several factors:

Firstly, whereas a comparison school showing interest beyond that of a SEAL school would contribute to null effects in regards to pupil responses in emotional literacy (as well as null effects in mental health and pro social behaviour), the purpose of the study was to examine the unique incremental effects of the SEAL programme beyond existing initiatives already present within schools. Therefore, on the basis of the claims made in the SEAL materials, levels of impact over the course of the study would be expected to surpass any differences once baseline data was controlled for.

Secondly, the variation in implementation amongst SEAL schools is also considered a measure of its potential impact. As Weissberg states (1989), if a school is unable to or unwilling to effectively implement the programme material, then there is an issue with the programme at either the design and process stage (as the materials are not sufficiently clear or comprehensive or are not compatible with the current status or ethos of the school) or there is an issue with process of implementation (e.g. the materials are not clear or sufficient for the schools to follow a suitable model of implementation). Therefore, lack of impact caused by variation in implementation indicates an issue with the current design of the programme, rather than a confounding effect.

Thirdly, the large variation in implementation, although not expected during the initial design of the study, was compensated for by the use of multi-level modelling. As school level variation is low (as measured by the intra-cluster co-efficient, see Table 6.1), it is suggested that variation in implementation does not significantly confound the current results when generalising findings to a national population. Given the variation in implementation, it is likely that, for a national sample, similar issues occur for other schools attempting to implement the SEAL programme. In terms of representation it is likely that this pattern is consistent, as (in reference to the strategies for analysis in methodology, see section 4.5.2), the frequency of

occurrence of difficulties across all case study schools implies a strong likelihood of variation of engagement with SEAL materials occurring within the wider quantitative sample. However, this interpretation must be treated with caution as it is based on data from a small sample of case study schools and is supplementary to the main research question, which assesses impact. For a more in-depth and critical analysis of issues of implementation see Lendrum (2010).

An additional difficulty with the current design is the potential impact a concurrent design can have on the quality of data (see Table 4.1). In a sequential mixed method, or single method design, one form of data collection occurs at any given time, however as with a concurrent design, the case study schools were asked to distribute pupils questionnaires designed to measure change in their attitudes and behaviour at the same as key members of staff were interviewed on their progress with the SEAL materials. There is a clearly a potential interaction between the two data points as staff may feel compelled to justify expected pupil responses. Despite the likelihood of this interference, the actual impact upon the data considered to be low. This is because there are many other reasons for potentially inaccurate data from individual members of staff (see section 4.5.1), and the strategy of multiple respondents sampling (see section 4.5.2) across several visits is a significant control for this source of confound. Pupil focus groups were scheduled to occur after the questions had been collected thereby avoiding possible bias after the distribution of the questionnaires. Any possible effect of the quantitative data is confined to the nine case study schools; therefore any effect is mediated across the larger national sample.

6.7.2 Issues of data collection

As discussed in chapter 2, there is significant controversy surrounding the measurement of EI and its related constructs, and the difficulties are currently centred around lack of incremental validity beyond existing measures of personality (Warwick & Nettleback, 2004), lack of construct validity in individual domains (Murphy, 2006) and subsequently poor choice of quality tools available (Humphrey et al., in press). The current study selected the ELAI (Southampton Psychology Service, 2003) in order to measure pupils emotional literacy, the domains of the ELAI matched the domains of the SEAL programme (see Table 1.1), but there is very little reference to previous usage and like other similar tools, has not been subjected to any advanced form of psychometric validation. A further complication, given its poor

internal structure (see Table 4.5), is the necessary use of a uni-dimensional measure of emotional literacy (e.g. overall emotional literacy, rather than in individual scores for motivation, social skills, etc.) as well as the necessary use of the self-report versions only for all three of the measured used. These limitations raise several important implications for the current study and are therefore discussed in further detail.

In regards to the criticism that the current study may have assessed elements of personality rather than the unique construct of EI, the argument is complex. Although there are no studies showing the extent to which the ELAI is a unique measure of emotional literacy (as consistent with criticisms of a lack of psychometric validation, the ELAI has not currently been correlated with existing tools), it is consistent to expect a self-report measure based on a mixed model of emotional literacy to correlate highly with existing personality measures (O'Connor & Little, 2003). However, the potential lack of incremental validity is an argument for the construct of EI in general, rather than as a result of this particular study, especially as it is the construct on which the SEAL programme is based. A more critical or in-depth assessment of the results could have been achieved through the use of multiple inventories, for instance, using other measures of trait and/or ability EI (such as the MSCEIT: YV (Mayer, Salovey, & Caruso, 2005) or the EQI: YV (Bar-On, 1997)). Although other tools have more substantial development histories, they are also plagued with a range of difficulties in validation and scoring (Murphy, 2006), and are therefore subject to the same criticisms faced by the ELAI. Other options included using multi respondents, such as teacher or parent report, which typically produce low correlations with self-report measures, leading to a further discrimination as to both the underlying relationships between the variations, and the extent to which favourable outcomes may be teachable. Although such approaches offer advantages in regards to validation, (Wigelsworth et al., 2010) the additional cost in both resource and time was deemed too high, as it was extremely unlikely such sample numbers could have been obtained if schools were asked to commit further time and resources to the study, as demonstrated by the increasing attrition rates over the course of the study under the current design (see section 5.3.1). In terms of construct validity, the ELAI was selected on the basis of its close strategic fit with the existing SEAL goals (see section 1.5), and despite an increased sample size compared to the original standardisation trial (Southampton Psychology Service, 2003), confirmatory factor analysis failed to identify sufficiently valid sub-domains in which to include within the final analysis. As mentioned previously (see section 6.6),

the use of a uni-dimensional measure may in part be masking differential effects of individual domains, for instance, prior studies suggest that trait EI domains such as adaptability and stress management are able to predict academic success, whereas other domains do not, in both university and adolescent aged samples (Lam & Kirby, 2002; Parker, Creque, Barnhart et al., 2004).

In hindsight, alternative tools with a more substantial development history could have been used to assess a uni-dimensional measure of EI (such as those cited in the previous paragraph). However, any tool within this area currently represents a compromise between validation history, relevance and applicability of domain, effort to administer and score, and appropriate age range. In consideration of the tools used in several prior evaluation studies (which either have no validation history, or measure irrelevant constructs such as explicit programme knowledge) (Durlak et al., in press), the ELAI is entirely appropriate, or 'fit for purpose', and arguably offers the best compromise. To further explore the domains highlighted by both Goleman and the SEAL materials (e.g. self-awareness, managing feelings, motivation, empathy, social skills), the current status of the field means that although this would be possible, a recent systematic review of available tools (Humphrey et al., in press) suggests that numerous batteries of tools would be required to adequately assess all the domains of EI, which creates further issues in regards to the acquisition and retention of appropriate sample sizes, time and resources required to administer and score, etc.

In regards to the levels of attrition recorded throughout the course of the study, there is a potential negative impact in regards to how representative the remaining schools are when compared to a national population. Although missing data analysis showed a random pattern of attrition in regards to the identified demographics (see section 5.3), there remains the possibility that the remaining schools differ from those that withdrew by some other characteristic or factor that has not been identified. In consideration of likely effects, the most germane explanation for schools remaining within the current study compared to those that did not is a continuing interest in the results of the study (as schools were provided with yearly feedback, see appendix 8). The likely effect on the study is that results would be inflated compared to a national population. As the final sample size was enough to be considered nationally representative, issues in regards to quantitative attrition are minor; however there are additional concerns in regards to the qualitative aspect of the data. The varying amounts of information gained in the case study schools (see Table 5.17 and

Table 5.18) represent schools varying ability and/or desire to provide information regarding the context in which SEAL is implemented. A difficulty emerges as of most concern are the schools in which the least volume of data was gathered. This is because there is a corresponding lack of ability to cross-reference or validate the comments made by the staff interviewed. A more complex difficulty is the possible over-emphasis or 'impression management' as research staff are directed to only members of staff who give a positive impression of the schools involvement. It is also possible that limited data means that important issues in regards to the SEAL programme are missed entirely through the inability to gain multiple perspectives (e.g. interviewing teachers who are required to implement the programme). It is worth considering that any underlying bias is likely to be in support of the SEAL programme, as there is little reason for schools to fail to arrange visits or interviews on the basis of positive gains.

Although such scenarios are undoubtedly present within the results, the constraints in the interpretation of the qualitative comments must be accepted as a limitation of the current study. This is especially true as the 'quality' of the remaining interview data from teachers and staff; especially senior management is of question as well. As discussed previously, staff interviewed for the purposes of the study fills a dual role as both participant and stakeholder. Given a pre-existing vested interest in the outcome of the final analysis, there is a serious question as to what extent comments made by staff reflect an idealised and favourable response rather than what is actually occurring, especially if difficulties or obstacles in implementing SEAL are encountered. This may be especially true of staff in a position where positive impression management is part of their role (e.g. head teachers). There is no easy solution to this difficulty, especially when missing data prevents cross validation of responses.

6.7.3 Issues of analysis

One of the most important issues in regards to the current design is suitability of either strand of the data collection to be successfully integrated into the other to produce meaningful and 'quality' results as previous literature has questioned the compatibility of qualitative and quantitative data to produce meaningful findings (Bloor, Frankland, Thomas, & Stewart, 2001).

In the context of the present study, there is a question as to the extent to which a small and purposefully selected sample of nine case study schools may have provided adequate data to identify factors that affect SEAL impact. The extent to which this was successfully achieved is particularly relevant to the previous issue of qualitative attrition as the lack the expected level of co-operation from individual schools means that the qualitative data is arguably impoverished. In regards to these criticisms, it is difficult to assess the validity of some of the comments gained from the qualitative analysis, as well as the possible value of recommending future research based on the same comments. For instance, qualitative comments suggest there may be a differential effect of programme impact on particular groups or individuals, not otherwise identified by the quantitative analysis. However on the basis of these comments alone, it is difficult to design future research without some indication of the prevalence (and therefore required sample size) or magnitude (and therefore appropriate measure) of these changes, or even how to accurately identify such groups. In regards to this limitation, it is important to note that such findings are not intended to be definitive or authoritative, and instead are used to tentatively explore possible connections between process and outcome that warrant further investigation, in effect to make *inferences* (Tashakkori & Teddlie, 1998) rather than *conclusions*.

Further unexpected issues with data analysis included the identification of large degrees of overlap between confounding variables, specifically gender, SEN provision, and ethnicity (see section 6.5). As previously discussed, the inclusion of these variables makes it difficult to assess their relative contributions to the assessment of emotional literacy, mental health difficulties and pro social behaviour. However, the confounds between these variables does not alter the outcome of the primary research question, which assessed the unique contribution of the SEAL programme above and beyond the identified socio-demographic factors. It should also be noted, that although there is an undoubted confound between the aforementioned variables, preliminary data screening (see section 5.3.1) indicated that the extent to which the variables are correlated was acceptable for analysis (i.e. no extreme multicollinearity (Field, 2009)).

The statistical approach of the current study was designed to not only address the general lack of UK based research, but also to counter many of the criticisms of prior studies. Examples include lack of control groups (Clabby & Elias, 1999), insufficient longitudinal assessment (Aber et al., 1998) and failure to account for the differing

effect of school (Durlak & Weissberg, 2007). However, in regards to the methodological choice to employ a multi-level design, there are certain reservations as a result of the analysis which raises the question as to whether the design of the current study and the use MLM should be employed in future designs assessing SEL within the UK.

Arguably, one of the most limiting factors with the analyses within the current study is the loss of detail in regards to individual variations within small groups. As mentioned previously, there is suggested variation of effects within unidentified specific groups or pupils. Whereas some essence of individual or group differences are captured by assessing the effects of socio-demographic factors such as gender and SEN provision, there remains the potential limitation of other forms of clustering of differential effects not identified by the current study. In consideration of likely groupings indicated in the qualitative analysis, one possible explanation is the effect of classroom, as this is consistent with individual staff reporting effects on the basis of their observations of the pupils they have contact with, who are inherently clustered by classes. Varying effect by class is consistent with Greenberg's model of implementation (Greenberg et al., 2005) (see Figure 3.5) which identifies the classroom as a source of variation in programme success (e.g. the ethos of the class, as well the skills or attitude of the teacher). In reference to prior research, it is also typical for other studies to examine effects at the class, rather than school level, although this reflects class based, curricula programmes (see Table 3.2), rather than whole school approaches. In this regard, a limitation of the current study was the inability to assess variation at the classroom level, which may account for a portion of the identified discrepancy between qualitative and quantitative strands of the analysis. This also raises a further issue in regards to the current study's inability to more critically and systematically assess the factors influencing teachers and associated staff comments. For instance no information was collected in regards to teacher characteristics such as number of years teaching, prior experience with social and emotional learning, or (as mentioned earlier) teachers own assessments of the abilities of their pupils. Whereas it is likely the collection and analysis of such data may have provided more in-depth reasons as whether there was a further variation at class level and investigation of pupil level skills, collection of this level of data would have required a much higher degree of co-operation from the schools and staff which, as already judged by the levels of attrition, may have caused a disproportionate decline in the number of schools willing to commit further time and

resources to the study. Additionally, the analysis of class level data with the current data set could be considered counter-productive as with a sample of approximately 50 schools, this could represent up to 200+ classes, the analysis of which would be difficult to draw meaningful results from. This is especially true given that 'class' is poorly defined at secondary school, as pupils change rooms, teachers and classmates several times a day. An alternative solution to investigating class level effects would be a more in-depth study, using fewer schools, as this would allow a greater synthesis between the quantitative and qualitative strands of research. Additional suggestions for further research are presented in section 6.5.4.

In reference to the limitations in assessing the implementation and process of the intervention, it is arguable that such issues are most important only after it has been established whether there is evidence of the desired magnitude of effect. For instance, if the current study has identified a significant effect on pupil outcomes as a result of the SEAL programme, an appropriate follow up would be the identification of factors of success. The current results suggest subsequent research should be directed in establishing the difficulties or barriers within the current design. However, for either scenario, an objective assessment is required in order to aid further investigation. In this regard, current UK research might be enhanced by using impact measures prior to assessing the process and implementation of UK SEL programmes such as SEAL.

In regards to the criticisms of poorly defined 'experimental' (SEAL) and 'control' (comparison) groups, on the basis of fluctuating levels of implementation, the use of MLM is a useful technique for identifying this variation, which would otherwise confound other designs. Both the charted residuals (Figure 5.3, Figure 5.4 and Figure 5.5) and intra-cluster correlation values (shown in Table 6.1) indicate the variation of scores between individual schools, as well as the overall variation attributable within schools. The use of MLM has shown that although there is a degree of variation in school approaches to SEAL, overall there is little impact on pupil level skills. In other words, the variations between schools (as discussed in the previous section) are seen not to directly affect pupil outcomes. Therefore variation in implementation between schools is not seen to have a significant effect. Such an observation would not be possible without the use of MLM as a technique for analysis. Equally, the research questions themselves, assessing the role of school level variables on pupil level skills cannot be effectively achieved without the use of

MLM. The results could be improved by incorporating a measure of implementation in order to more critically assess overall 'successes of integrating the SEAL programme into schools. However, such a tool is difficult to conceptualise and previous attempts have been limited to simple dichotomous responses (Durlak et al., in press).

6.7.4 Exploration of additional factors

As noted in the previous section, due to the need for further research into emotional literacy and its practical implications, there are currently many issues requiring investigation. Given time, resource and practical constraints, the current study represents an unavoidable compromise between the acquisition of new knowledge and the myriad of limitations such as timescales, willingness of participants and availability of appropriate tools. Therefore, there are a number of additional factors, omitted from the current design that could otherwise have been included to augment the findings of the current study. Their potential impact on the current study and their suitability for inclusion in future research on the basis of the current findings are now briefly discussed.

Prior influential studies have identified issues involving school culture, such as a pupil's sense of community and liking for school or teachers, as important factors in achieving pupil level outcomes such as those listed within the SEAL materials (e.g. more effective learning, better behaviour, improved well-being) (Battistich et al., 1995; Battistich et al., 1998; Dufour, 2007; Lambert, 2002) and measures are available to quantitatively assess such factors. As SEAL was designed to alter the school ethos to promote factors such as a sense of community and engagement, including measures of school climate would represent a direct measure of ethos otherwise absent from the study. Such measures would also provide a strategic compromise between the need for objective measures of outcome, and the current UK focus of changes in process and qualitative feedback, and a more definitive measure of the arguably nebulous definition of the SEAL programmes impact on a school climate. A further school level variable missing from the current study is a measure of ethnic make-up at the school level. Ethnicity was identified (with reservations) as an important pupil level predictor, and additional information such as the % of English as a second language, or ethnic diversity of a school may provide additional information as to its potential impact on shaping culture (Deal & Peterson,

2009). Other related measures may have benefited the current study include both self-rated and more objective wider measures of the theorised beneficial effects of the SEAL programme. Examples include measuring any reduction in the frequency of reported bully or alternatively self-rated effects of bullying by pupils. Lower levels of stress and anxiety are also reported as a distal outcome of a successful SEL programme. As there is evidence linking anxiety and emotional difficulties with poor academic achievement (Putwain, 2009), self-ratings of academic competence or objective measures of improved learning (e.g. tests scores) would have also allowed the current study to more critically assess any effect on the favourable outcomes, especially as raising academic performance is one of the key benefits claimed by SEL supporters (Elias et al., 1997).

However, in regard to the current study, the collection of these forms of data would have become an additional responsibility and subsequent burden to all of the schools involved, and there are certain practical limitations as the extent to which schools are willing to alter their daily practise for the sake of research. Therefore, it was decided that in order to preserve the co-operation of the maximum number of schools, and to ensure the maximum validity of the current measures (as pupil level attrition and exhaustion are also important issues), not to include any additional measures beyond those already selected. Issues of practicality also prevented the collection of any alternative measure of EI, specially the use of ability measures to assess alternative psychological frameworks (such as the ability model of EI). Although it would have been useful to compare the various conceptualisations, especially in relation to mental health difficulties and pro social behaviour, the inclusion of additional inventories was considered too much of a burden (as previously mentioned). This is especially true given that as self-report versions are only starting to emerge, they are currently considered very unwieldy instruments, for instance, the MSCEIT-YV is 101 items long (Mayer et al., 2005).

In retrospect, despite the attractiveness of a more in-depth study of the variety of theorised benefits of the SEAL programme, given the lack of significant change in the proximal variable of emotional literacy, the likelihood of significant results of these additional measures would be very low, therefore suggesting that such measures may not need to be incorporated in future research. Measures of climate were included to a small selection of schools in addition to the measures used in the current study (the nine case study schools) as part of a wider study (Humphrey et al., in press), but experienced higher than expected levels of attrition in their return,

indicating the likely level of commitment of schools was reached using on the current measures.

Similar arguments apply to the decision to not include teacher measures, (i.e. measures of teachers self-rated EI) as the extent to which emotional literacy is required in those delivering SEL based materials is largely untested and preliminary findings are only just beginning to emerge (Perry & Ball, 2007). However, the assessment of teacher skills faces problems with data collection (as very low return rates would be expected, consistent with the findings of the wider study (Humphrey et al., in press). Additionally, there was the aforementioned practical difficulty, with the decision to exclude class level data, specifically the complexity and validity of examining class at secondary level.

Aside from issues of practicality within schools, a large source of unexplored variance is the influence of factors outside of school. There is some suggestion of biological and familial or parental influence of pupil skills and whereas the current study's focus was in the adaptation of skills through school based initiatives, it is worth briefly considering that biological factors such as biological maturation of emotional regulation (Fox, 2003) and temperament (Zeidner et al., 2003) or social influences such as the mediating role of parental interaction (Zeidner et al., 2002) may have a more significant effect on developing pupil skills and competencies. However, both measures of biological influences and parental involvement are very much in their infancy, making the assessment of the likely contribution difficult. Despite a lack of clear evidence as to the nature and role of parental influence, evaluation of family interventions has begun (Downey & Williams, 2010), although preliminary reports appear to suffer from a large number of the criticisms assigned to prior research projects (e.g. poorly selected groups, lack of adequate controls, poor quality assessment measures - see section 3.4.4).

Arguably, the most significant area neglected by the current study is that of implementation. Although there are some indications from the qualitative comments that null effects are most likely a result of lack of appropriate implementation by schools (especially given the existence of a valid, if modest theoretical framework), the current study is focused on impact rather than process, the effect of which is the sacrifice of detail regarding the process by which the SEAL materials were accessed and implemented by school staff. In reference to Weissberg et al's (1997) prerequisites for successful impact, implementation is a key aspect of programme

evaluation and arguably any study would be incomplete without first assessing its likely influence in successful programme outcome. In this way, the current study is undeniably remiss in appropriately assessing the role of implementation in programme impact, and whereas normally this may arguably be viewed as a criticism of the study, there are two mediating factors to consider. Firstly, given the importance of implementation as a factor in programme outcome, it argued that it would be more remiss to attempt to analyse such a factor alongside impact, as given the constraints of the researcher and this report, the compromise in critical detail would be too great, leading to diminished findings in both impact and implementation. This is evidenced by a recent review which used a dichotomous response to whether schools had encountered difficulties in implementing a SEL programme (e.g. Yes / No) (Durlak et al., in press). Whereas this is an extreme example, it highlights the limited use of insufficiently detailed or critical evaluation. Therefore the inability to consider both aspects is a prime example of the limitations of faced in research. Secondly, implementation was not considered as part of the current study as it was assessed in equal detail concurrently by a second member of the research team. In this way, implementation and impact represent two parts of an overall comprehensive review of the SEAL programme. Further details in regard to implementation can be found in Lendrum (2010).

6.8 Conclusion

6.8.1 Summary of study

In summary, the current study represents an evaluation of the secondary SEAL programme, designed to enhance pupil's social and emotional skills and subsequently lead to better mental health and increased pro social behaviour, compared to schools not implementing the SEAL programme.

The study had four main aims;

- To assess the impact of the SEAL programme on pupil's outcomes, specifically, whether there was any change in pupil's emotional literacy, mental health or pro social behaviour over the period of the study

- To assess the influence of the socio demographic factors of gender, ethnicity, level of SEN provision and eligibility for free school meals upon pupils emotional literacy, mental health and pro social behaviour
- To explore whether a valid underlying relationship between the factors of emotional literacy, mental health and pro social behaviour exists.
- To explore qualitative comments from a select number of case study schools in order to provide context to the quantitative results

These aims were achieved by issuing pupil-rated questionnaires to 22 schools implementing SEAL at the beginning of the study, as well as 19 comparison schools which were matched on the basis of similar size, attainment, and pupil characteristics such as percentage of pupils eligible for free school meals and percentage of pupils receiving SEN provision. Measures were taken at baseline and again one year and two years after implementing SEAL. The design of the study was based on the principles of multi-level modelling, which allowed the study to investigate the role of the school and other associated demographic factors in influencing pupil level skills. The study also included a case study element designed to add context to the quantitative results, in which visits were conducted in nine case study schools over the course of the study.

6.8.2 Summary of results

Overall, the results indicated a marginal non-significant effect of the SEAL programme on pupil's emotional literacy and mental health difficulties, with no significant effect identified in regards to pupil's pro social behaviour. The magnitude of the effect of the SEAL programme (after controlling for the aforementioned socio demographic factors) was marginal for all three variables. The identified effects were almost exclusively confined to the pupil level, and correspondingly, analysis of socio-demographic factors identified differential levels of emotional literacy and mental health difficulties at the pupil level, on the basis of gender, level of SEN provision and ethnicity. Further analysis revealed valid relationship between emotional literacy and mental health and pro social behaviour. In reference to Weissberg (1989), given the evidence of a valid theoretical framework and an arguably rigorous evaluation, the difficulty in producing a valid impact appears to be as a result of the design and

process of the programme, which includes the ability for schools to implement the programme effectively.

In regards to the identification of a valid psychological framework underpinning the programme, a significant relationship was found between emotional literacy and mental health after socio demographic factors had been controlled for. Equally, a significant relationship was found between emotional literacy and pro social behaviour. The magnitude of both the relationships, although meaningful, represent a smaller than expected magnitude in change when compared to the expectations of previous literature (which do not control for demographic variables). The small magnitude of change is also a possible indication of a more interactional (rather than causal) and complex relationship than that theorised by SEL proponents. However insufficient factorial validity of the ELAI prevented a more detailed examination of any potential differential effects of the emotional literacy domains. In analysis of the results, the underlying relationship between the variables suggests that any gains as a result of the SEAL programme would be small. Similarly, qualitative comments suggest that schools generally did not observe any impact, which supports the findings of the quantitative analysis, which is potentially limited by the specificity of the tool (e.g. wider changes in pupils behaviours were not be recorded using the selected inventories).

Several difficulties limit the interpretation of various aspects of the study's findings. Despite that differential levels of emotional literacy and mental health were observed between gender, level of SEN provision and ethnicity, large confounds between these variables (although within acceptable limits for statistical analysis), impacted upon the ability to interpret the contribution of these factors towards emotional literacy, mental health and pro social behaviour. This is supported by qualitative comments, which suggests that there is a potentially more sophisticated relationship between emotional literacy and mental health than modelled within the current study. However, such confounds did not impair the main finding of the study, the marginal non-significant effect of the SEAL programme. Additionally, large variations in how the case study schools engaged with the SEAL materials meant that there was a difficulty in creating a valid distinction between SEAL and comparison schools, although it was considered that minimal engagement with the materials constituted a failure of implementation. MLM showed that school level effects of varying implementation did not have a significant effect on the main result of the study.

6.8.3 Contribution to knowledge

As the current study represents the largest UK assessment of a SEL programme to date, in a rapidly changing and extremely contentious field, the results represent a unique and incremental contribution to knowledge in several areas. Specifically, the methodological advancement of SEL assessment within the UK, incremental development in recommendations for SEL programme design and advancements in data regarding the current state of emotional literacy of secondary school pupils. Additionally, knowledge of the relationship of socio demographic factors (including the role of school) and small advancements in the theorised relationship between EI, mental health and pro social behaviour are advanced as a result of the study. Several tentative conclusions and avenues for future research produced as a result of the study are now discussed.

Methodological advances

Given the level of rigour displayed in the study is not typically represented in prior studies (Hoffman, 2009) it is shown that although there are a number of problems with selecting appropriate tools with which to measure pupil skills, it is possible to include measures of objective assessment within an evaluation design with some level of success. The use of comparison schools within the study is another important factor, as until there is better understanding of the normal maturation effects associated with elements of emotional literacy (such as emotional regulation), and the varying degrees of contributions from other factors such as familial influences, appropriate controls are required in order to maintain a level of validity in results. The current study demonstrates that this is achievable, and the design could be replicated, even with a smaller sample of schools. These developments, although not unique at all in educational research, are an advancement on current UK efforts, which to date have excluded impact in favour of more subjective measures of process and implementation (Ofsted, 2007; Smith et al., 2007). Inclusion of objective outcome measures allows for a more critical assessment of pupil skills, specifically controlling for the effect of school. It is a logical and arguably underrepresented argument within research that schools will vary in their abilities to influence pupil level outcomes, and whereas the current study shows that the majority variation in this instance is currently attributable to the pupil level, this finding is equally as important as it demonstrates schools inability to influence pupils, which is an equally valid

finding. It is intended that the current study, given increasingly accessible software (see www.cmm.bristol.ac.uk), is a demonstration of the appropriateness of using MLM designs in educational research. Such findings also have implications for the appropriate assessment of future interventions, hopefully providing some form of framework on which to base high quality research, allowing for an improvement in methodological rigour and subsequently more valid results in this area.

SEL Programme design and expectations

In regards to the practical application of emotional literacy, the results of the study argue for more conservative expectations than the prevailing consensus has typically been (Elias, Zins, Graczyk, & Weissberg, 2003) and, more specially, that advertised by the SEAL programme. In specific regard to SEAL, results indicate that, in its current form, schools will not be able to access the range of potential benefits offered by its implementation, thereby allowing consumers of the initiative to be more aware and informed as to the expectations of SEL programmes. It is worth noting that the results of the current study indicate the need for at least alteration of the programme material in order to achieve favourable pupil outcomes. Further recommendations are discussed in section 6.9.

The findings are also in contrast to the successful outcomes cited by other programmes. A significant explanation of this difference is as a result of a more critical examination of what constitutes a SEL programme, and on the basis of the analysis of the findings, it is argued that it would be beneficial to other studies to adopt the 'compartmentalisation' of various SEL initiatives, as highlighted in the current study and other sources (Adi, 2007). The maximum theoretical gain attributable to EI based SEL programmes are discussed later.

Emotional literacy of pupils (and the role of socio-demographic factors)

The current results in part, contrast the reasoning for the application of 'universal promotion' programmes. The analysis indicates that not only do schools currently contribute only a small fraction of influence in pupil level skills, but equally the differential effects of socio demographic factors indicates that certain groups have significantly lower levels of emotional literacy and mental health. Such groups might benefit from more targeted approach, and overall, the majority of the pupils within the

study may not require higher levels of emotional literacy, or benefit from such a rise where it to occur.

The investigation into the varying effects of socio-demographic factors represents an advancement in the understanding of emotional literacy, as there is currently extremely little research in this area, especially with school aged samples (Roberts et al., 2001; Van Rooy, Viswesvaran, & Pluta, 2005b). A consequence of this approach is an increased understanding of the unique incremental validity of emotional literacy as a construct for favourable behaviour. However, the interpretation of the current values are difficult for a number of reasons including; small sample sizes, especially in regards to ethnicity, difficulty in establishing the extent of the difference, given the limited use of the ELAI, especially with similar tools, and the lack of an prior normalisation samples, with which to assess what an 'average' measure of emotional literacy would be expected. Lack of significant change for all pupils also means there is no indication as to whether particular groups are equally amendable or resistant to change. However, one advantage to the current study is the ability for future projects to provide data which to compare and further validate emotional literacy tools.

Relationship between emotional literacy, mental health and pro social behaviour

On a more theoretical basis, although more substantive assessments of pupils mental health and behaviour exist (Green et al., 2004; Meltzer et al., 2000), no study has yet investigated the relationship between emotional literacy and mental health in school aged children. Therefore the findings of the current study provide a contribution to the understanding of the relationship between emotional literacy, mental health and pro social behaviour. A valid relationship between the variables was established, and this is considered further evidence for a theoretical link between emotional literacy and favourable outcomes, which was cited as a limiting factor in assessing the value of SEL (Durlak et al., in press). This area is valid for further investigation such as the relationship with emotional literacy and other favourable outcomes, such as stress and anxiety. However, as discussed, findings were of a lower magnitude than would be expected on the basis of prior evidence. This has led to a tentative suggestion that the relationship between the variables is more complex than previously conceptualised, and has presented a significant avenue for future investigation as to precise nature of the interaction between emotional literacy, mental health difficulties and pro social behaviour.

In summary, in the fields of both theory and practise, the current study provides an opportunity for replication of various components in order to support some of the tentative conclusion in regards to the results, and has additionally provided some further avenues for investigation. The implications of these conclusions for future policy, practise and research are now discussed.

6.9 Implications and recommendations

Policy

Given both the nationally representative sample size, and that the programme under evaluation is intended for use in schools nationally, there are serious implications for the future of UK policy in enacting positive changes in pupils' emotional literacy, mental health and pro social behaviour. On the basis of the results, there is a strong incentive to support the notion that pupil skills will not be meaningfully improved by a two year adoption of the SEAL programme in its current format. Therefore in order to fulfil the goal of improving secondary school pupils' skills through social and emotional learning, (as consistent with recent Governmental policy (Department for Education and Skills, 2003, 2004, 2005, 2006a) there is valid argument that such a goal cannot be completed without some form of alteration to existing policy.

At the lowest degree, results from the study suggest that changes are required to the design and the process of the SEAL materials to ensure results from the current study are not replicated nationally. Such alternations might theoretically include an alteration of the SEAL guidance materials to include more explicit details of how the programme is to be delivered, however any details as to which aspects of the guidance, should be adapted, and what form these alterations should take in order to increase the success of the programme is beyond the scope of the current study.

Further changes to the 'universal approach' of SEAL are suggested on the basis of the identified differential effects for particular socio demographics such as gender and level of SEN provision. There is a tentative suggestion that particular groups may have more to gain from an effective intervention, as they show lower levels of baseline skills compared to other pupils. However whether such groups would be more responsive to more targeted inventions (see Figure 3.2) for instance, the small group work component of primary SEAL, (which showed some marginal improvements of select pupils (Humphrey et al., 2008)), is yet to be determined. The

implication of this recommendation would be a change in ethos from a universal promotion model to that of a deficit model approach, which is contrary to the overall aim of the current SEAL programme.

More significant changes may be implicated on the basis of a valid but modest magnitude of relationship between the variables of emotional literacy, mental health difficulties and pro social behaviour, as there is a question as to whether emotional literacy is the most efficient method for achieving the favourable outcomes of better behaviour and improved mental health cited within the SEAL materials. As noted in section 3.4.2, there are advantages in providing a more distinct classification of SEL programme, which offers more specific benefits in certain skills (such as exclusive anti-bullying / violence prevention) rather than offering a 'panacea' approach (Barchard, 2003). In this way, the SEAL materials may be adapted to focus exclusively on either one particular aspect of emotional skills such as self-regulation, or with a particular focus on social skills, in order to provide greater effects in more specific domains. Alternatively, a specific programme focusing on mental health could either replace components of SEAL, or run in conjunction to provide a greater exposure to relevant curricula. However, as previously stated, the nature of any such changes were not the principle focus of the research.

In summary, recommendations at the policy level include:

- Additional research and consultation with schools currently implementing SEAL to ascertain the design and process issues encountered by schools
- Consideration of developing a measure of implementation to be able to sample a wide selection of schools currently implementing SEAL as to ascertain the source of difficulty
- Consideration of more targeted and curricula based programmes in order to target specific favourable outcomes (such as social skills / emotional regulation / mental health)

Schools

The findings of the current study have implications for the expectations and future conduct of individual schools wishing to improve the social and emotional skills of

their pupils. Arguably the most important observation is the levels of expectation schools may realistically adopt in regards to observable changes in pupil skills as a result of implementing the SEAL programme. This observation is based both on assessment of pupil changes over the course of the study, and also the strength of the relationship between EI, mental health and pro social behaviour, which suggests, even for an effective SEAL programme, the magnitude of the change would still be less than is commonly implied by SEL literature and supporting organisations (Elias et al., 1997; Weare & Gray, 2003). Therefore, given time, finance and resource constraints, schools must critically consider the costs vs. benefits of attempting to implement the SEAL programme on the basis of the current results, especially as schools are currently free to choose alternative programmes, as can be demonstrated by prior UK research (Collins, 2009; Curtis & Norgate, 2007; Kelly et al., 2004).

In reference to selecting alternative SEL programmes, the possible differential use of social and emotional skills (e.g. the development of emotional regulation is more important for mental health than motivation) refutes the idea that EI based school programmes need necessarily to be universal, as selective or indicated programmes (which target individuals or subgroups on the basis of identified risk factors (Greenberg, Domitrovich, & Bumbarger, 2000) may be effective in delivering skills to those who would receive most benefit. Calls for specific interventions to target at risk groups are beginning to emerge (Gardner, 2010 677), however, this issue requires further validation and evidence before being accepted as a recommendation of research (see 'future research').

The mixed comments in regards to the qualitative findings suggest schools might also benefit from identification of the specific goals of an intervention prior to implementation, which would allow a more systematic measurement of changes when assessing programme impact. It is feasible that some form of objective measurement could be included within the intervention materials.

More specific goals, conservative expectations, and an ability to assess programme impact without additional help would aid schools in establishing the effect on any intervention and thereby assessing its value, and additionally be able to more accurately identify any differential effect of specific groups or pupils, as inferred in the qualitative comments.

On this basis, recommendations for schools include:

- Adoption of a cautious approach when presented with material which implies large or significant changes over short periods of time, in wide ranges of pupil skills or with minimal levels of intervention
- The selection of a SEL programme on the basis of individual need of the school, rather than on the basis of the range of advertised benefits
- The use of existing mentoring and assessment as a basis for SEL programme evaluation.

Future research

It is important to note that the implications and recommendations made within the section are on the basis of the conclusions drawn from the current study, and are therefore restricted by the methodological limitations encountered during the course of the evaluation (see section 6.7). This is especially true given the difficulties and controversies with current EI research (see Chapter 2) as well as the inconsistent research in the practical delivery of SEL (see Chapter 3), which is particularly sparse in the UK context. The outcome of this assessment is that although recommendations in regards and policy may be tempered by caution, a significant contribution of the current study is the recommendations for several important avenues for further research.

One of the wider and most significant implications of the study is the suggestion that a unitary construct of emotional literacy is rejected in favour of a more modular approach. This would mean rejecting unitary measures of mixed and trait models EI in favour of collecting data of individual domains. Given the differences between ability, mixed and trait EI, ability models are not measured within the study, and face other, more unique difficulties with their measurement, (Brody, 2004) which excludes them from the current argument. Such a recommendation is extremely tentative, but it suggests that a future opportunity for EI and SEL researchers is a more critical examination of the differential effects of the various domains of EI on a range of pupil benefits. For instance, assessing whether there is a stronger link between emotional

regulation and mental health, compared to other domains of emotional literacy, or whether there is a similar relationship between social skills and pro social behaviour. Arguably, current tools are insufficient for this form of research to occur without methodological difficulties (such as those encountered with the current study), however, these difficulties arguably reflect the need for a more critical examination of this area. A favourable outcome of research in this area would be a greater understanding of how emotional literacy skills contribute to the range of favourable outcomes, which is a current and valid concern within the literature (Durlak et al., in press).

Several opportunities for future research are presented in regards to the established underlying relationship between the variables of emotional literacy and mental health, as the study indicates the relationship may be more complex than originally theorised. For instance, there are further questions in regards to the nature of the differential effects for groups with low emotional literacy (either on the basis of the identified risk groups as demonstrated by the current study, or by virtue the fact of having low self-rated EI scores on the basis of factors yet to be identified). For instance, are 'low EI' groups at greater risk for issues in regards to mental health or behaviour, or social skills? Is there an identifiable directionality in regards to individual differences in emotional literacy (for instance, does 'low EI' occur prior to higher rated mental health difficulties?), or are 'low EI' groups more amendable to intervention, e.g. are their 'graduated needs' for at risk groups compared to individuals displaying an average or 'high' level of EI (Vazsonyi et al., 2004)? The suggestion that a non-linear trend exists for adolescents with particularly low emotional literacy is a tentative one, as it is based on very limited data. However, the establishment of norms upon which future studies could be compared would be a significant improvement with adolescent research in emotional literacy. Despite the attractiveness of such a development, such a scenario is unlikely to occur until there is a greater degree of improvement and validation history in the current tools available, which is unlikely to occur whilst the nature of the construct of EI is still debated. Therefore, with reference to the argument for a more modular assessment of emotional literacy, a more critical investigation into particular domains, with further adolescent samples is recommended.

In summary, recommendations for future research include:

- The use of measures and inventories which assess the differential effects of the domains of emotional literacy on pupil skills and behaviours
- The use of multiple measures in order to establish norms for current levels of emotional literacy in adolescent and child samples
- Investigation as to individual differences in levels of emotional literacy, both by identifying socio-demographic risk groups, and also by identifying whether there are additional implications of being identified with 'low emotional literacy'
- Further use of regression techniques in order to more critically investigate issues of magnitude, directionality and linearity of relationships between EI and favourable outcomes

6.10 Conclusion to study

The current study represents support for researchers critically assessing the construct and practical implications of EI, a challenge to future developers and evaluators of EI based SEL programmes and tools, and a warning to educators seeking to improve favourable pupil outcomes.

There is certainly evidence to suggest that at least some aspect of the emotional literacy construct is linked to improvements within pupils. Therefore, researchers should be encouraged by the excitement of uncovering a significant (if modest) relationship of a more precise nature than previously theorised, allowing the benefits of emotional literacy to be utilised in the most efficient way possible.

This research provides a challenge for both researchers and future developers and evaluators of SEL based programmes to ensure that there is a continued development of high quality tools and programmes. There is also a need for a particular emphasis on consistency with the current developments of the field. Although undeniably difficult and complex, efforts to rise to such a challenge will undoubtedly reduce unsubstantiated claims of success, lower levels of criticism, and hopefully reduce the risk of a generalised backlash that would threaten to undermine the quality element of current research.

Given the size of the challenge to those working in the fields of EI and SEL, there is a warning to the consumers of the research, namely the teachers and educators, who should be made aware of the currently neophyte status of the field, as it is the education system and those within it who ultimately have the most to gain or lose on the basis of this research.

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Appendices

Appendix 1 – Timescales of project

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Appendix 1 – Timescales of project

Time	Aspect of Project
Pre Time 1 – September 2007 – January 2008	
Sep 2007	Invite schools to participate in study (see appendix 2)
Sep 2007	Access NPD database for pupil list
Oct 2007	Finalise schools (case study and quantitative sample) and arrange distribution of questionnaires
Time 1 - Jan 2008 – December 2008	
Jan 2008	Time 1 Questionnaires issued
Feb 2008	Time 1 responses collected Qualitative case study visit 1
June 2008	Qualitative case study visit 2
Oct 2008	Qualitative case study visit 3
Time 2 - January 2009 – December 2009	
Jan 2009	Time 2 responses collected Time 2 Questionnaires issued
Feb 2009	Qualitative visit 4
Jun 2009	Qualitative visit 5
Time 3 Jan 2010 – September 2010	
Jan 2010	Time 3 Questionnaires issued
Feb 2010	Time 3 responses collected Data Analysis begins

Appendix 2 – School invitation letters

An Evaluation of the Secondary Social and Emotional Aspects of Learning (SEAL) Programme

October 2007

Dear colleague

I am writing to request your schools' participation in a national evaluation of the Secondary Social and Emotional Aspects of Learning (SEAL) Programme. This is a comprehensive approach to promoting social and emotional skills through:

- using a whole school approach to create the climate and conditions that implicitly promote the skills and allow these to be practised and consolidated;
- direct and focused learning opportunities (during tutor time, across the curriculum, in focus groups and outside formal lessons);
- using learning and teaching approaches that support pupils to learn social and emotional skills and consolidate those already learnt
- Continuing professional development for the whole staff of a school.

The aim of the research is to assess the impact of secondary SEAL. The voluntary research, which began in September 2007 and ends in August 2010, is being conducted by the University of Manchester on behalf of the Department for Children, Schools and Families. Your school was identified as one of approximately 300 secondary schools that are implementing SEAL from September 2007.

The project comprises of 3 main phases. In this first phase, we are writing to colleagues at all 300 secondary schools that are attending the Secondary SEAL conference in London and are intending to implement SEAL. We are asking colleagues at these schools to complete a brief survey about:

- (a) The status of SEAL implementation in the school;
 - (b) The broader social and emotional climate of the school;
 - (c) The approximate proportion of feeder primary schools that are using SEAL;
- And (d) willingness to be involved in later phases of the research.

A copy of the survey is enclosed with this letter. I would be extremely grateful if you could complete the survey and return it to our research team by Friday 26th October 2007 using the FREEPOST envelope provided. The survey will be sent again in early 2010 so that we can assess the impact of the secondary SEAL programme at whole-school level.

The second phase of the project involves a longitudinal quantitative evaluation of the impact of secondary SEAL on pupils' social and emotional skills in 25 schools that are implementing SEAL ('SEAL schools'). For the purposes of comparison, we will also be collecting data from pupils at 25 schools *not*

currently implementing SEAL ('Comparison schools'). In January 2008 we will send copies of a brief, 2 page questionnaire (a sample of which is enclosed with this letter) to each school to be completed by all Year 7 pupils (for research purposes we would like to focus on one year group). Using the COLLECT database, we will have 'personalised' the questionnaire for each pupil (e.g. the pupils' names, sex, age and so on will appear on the front cover) and the copies will simply need to be handed out and completed in form time. We will then arrange for the completed questionnaires to be picked up by courier from each school. This process will be repeated with the same cohort of pupils in January 2009 and January 2010, enabling us to assess the on-going impact of SEAL.

<<PTO>>

The third phase of the project will run in parallel to the second, and will involve longitudinal case studies of 10 SEAL schools, drawn from the 25 participating in quantitative evaluation. This phase will enable us to explore how SEAL is implemented in secondary schools. The case studies will involve interviews with key staff, pupils, parents, and other relevant stakeholders, observations of lesson and other contexts, analysis of attendance and exclusion trends, and questionnaires to pupils and staff regarding the social and emotional climate of the school. All of the above will be conducted from January 2008 to February 2010.

We would be very grateful if your school would be willing to participate in the above research. At the end of the survey enclosed with this letter you are given the option to participate in (a) the longitudinal evaluation, or (b) the longitudinal evaluation and the case study – please indicate which applies to your school. All participating schools will receive a copy of our final report, in addition to an individual report which demonstrates the level of impact of SEAL in the school as compared to our national sample. I have enclosed a 1 page 'flyer' for the project which summarises the key points outlined above that you may wish to use when discussing your schools' participation with colleagues. If you have any queries, please do not hesitate to contact me on 0161 275 3404 or at neil.humphrey@manchester.ac.uk

Yours sincerely,

Dr Neil Humphrey
Principal Investigator

Enc.
1 x School survey
1 x Sample pupil questionnaire
1 x 1 page flyer
1 x FREEPOST envelope

Appendix 3 – Sample size calculations

Abbreviations

N = Number of subjects according to standard sample calculations

m = Number of schools at level 2

p = Intra cluster correlation

n = Average number of pupils per school

N_{eff} – Ideal number level 1 sample, on the basis of MLM corrections

Alpha = Set at 0.01, therefore, f is no smaller than 0.02 / d = 0.04 / g = 0.04

Calculation Steps

First, a standard sample size was selected on the basis of normal regression. On the basis of Cohen (Cohen, 1992), an extremely rigorous effect size was selected: Alpha = 0.01 for a small effect size ($f^2 = 0.02$).

It was calculated that for a standard multiple regression using 14 predictor variables a sample of 1254 pupils would be needed.

$$m = \frac{N}{1 + (n - 1)(1 - p)}$$

Corrections were then made for the multi-level model.

On the basis of previous data (Time 1 data) and previous similar studies (Humphrey et al., 2008), a large pupil variance was expected, and the estimated ICC set accordingly.

$$16_{Schools} = \frac{1245_{pupils}}{1 + (81 - 1)(1 - 0.01)}$$

$$N_{eff} = m [1 + (n - 1)(1 - p)]$$

Adjusted calculations show the current study needed a minimum of 16 schools, with an average of 77 pupils each to detect the smallest of effect sizes.

Appendix 4 – Inventories

EVALUATION OF THE SECONDARY SOCIAL AND EMOTIONAL ASPECTS OF LEARNING (SEAL) PROGRAMME - PUPIL QUESTIONNAIRE

Here are some questions about you. There are two sets of questions – 25 on this page, and 25 on the other side. Please try to answer them all, as honestly as you can. Read each question and then put a tick in one of the boxes. Below is an example of how to answer the questions. In this example, if you do not think you are shy at all, you would tick the box 'not like me at all'.

	Very much like me	Quite like me	Only a bit like me	Not like me at all
I am a rather shy person				√

Now please answer the rest of the questions. Make sure you complete each question – and don't forget to complete the questions on the other side. Many thanks!

	Very much like me	Quite like me	Only a bit like me	Not like me at all
1. I try to listen to other people's views even when I think they are wrong.				
2. I often forget what I should be doing.				
3. I am aware of my own strengths and weaknesses.				
4. I often lose my temper.				
5. A lot of people seem to like me.				
6. I know when I am starting to get upset.				
7. I tend to leave things until the last minute.				
8. When I'm sad, I usually know the reason why.				
9. I get upset if I do badly at something.				
10. I can make new friends easily.				
11. I get annoyed when other people get things wrong.				
12. I carry on trying even if I find the work difficult.				
13. I am easily hurt by what others say about me.				
14. I calm down quickly after I have got upset.				
15. I am a rather shy person.				
16. When I notice people getting upset, I try to help them feel better.				
17. I make a good effort with most of my schoolwork.				
18. I tend to put myself down even when I have done something well.				
19. I am usually a calm person.				
20. I spend too much time alone.				
21. I try to help someone who is being bullied.				
22. I get distracted easily from what I'm supposed to be doing.				
23. I worry a lot about the things I'm not good at.				
24. I can wait patiently for my turn.				
25. I can make friends again after a row.				

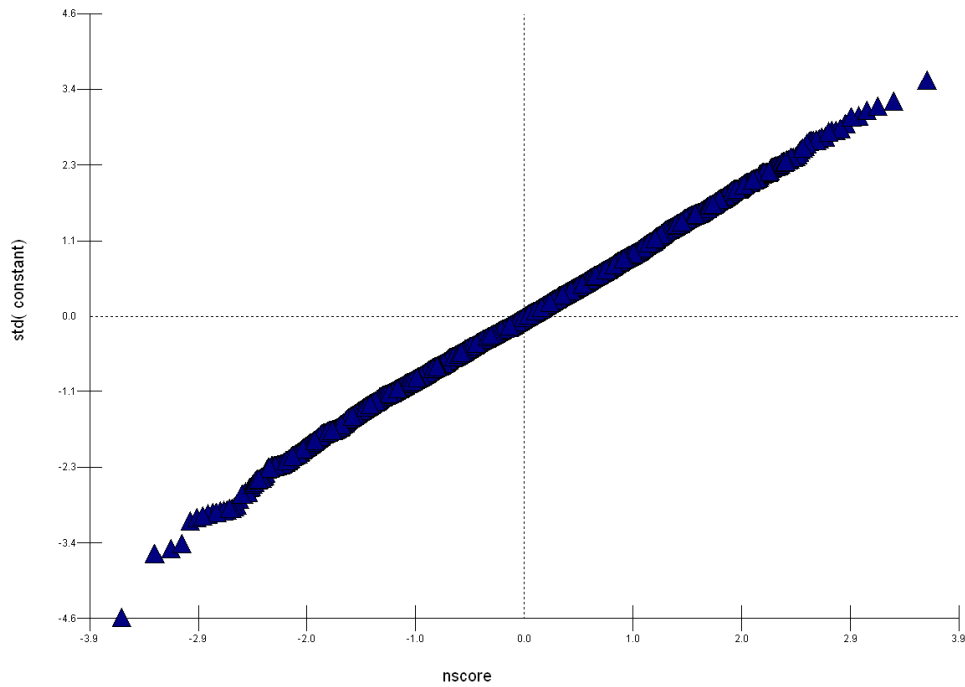
PLEASE TURN OVER THE PAGE AND COMPLETE THE SECOND SET OF QUESTIONS.

	Very much like me	A little like me	Not like me at all
1. I try to be nice to other people. I care about their feelings.			
2. I am restless. I cannot stay still for long.			
3. I get a lot of headaches, stomach-aches or sickness.			
4. I usually share with others (food, games, pens etc.)			
5. I get very angry and often lose my temper.			
6. I am usually on my own. I generally play alone or keep to myself.			
7. I usually do as I am told.			
8. I worry a lot.			
9. I am helpful if someone is hurt, upset or feeling ill.			
10. I am constantly fidgeting or squirming.			
11. I have one good friend or more.			
12. I fight a lot. I can make other people do what I want.			
13. I am often unhappy, down-hearted or tearful.			
14. Other people my age generally like me.			
15. I am easily distracted. I find it difficult to concentrate.			
16. I am nervous in new situations. I easily lose confidence.			
17. I am kind to younger children.			
18. I am often accused of lying or cheating.			
19. Other children or young people pick on me or bully me.			
20. I often volunteer to help others (parents, teachers, children).			
21. I think before I do things.			
22. I take things that are not mine from home, school or elsewhere.			
23. I get on better with adults than with people my own age.			
24. I have many fears. I am easily scared.			
25. I finish the work I'm doing. My attention is good.			

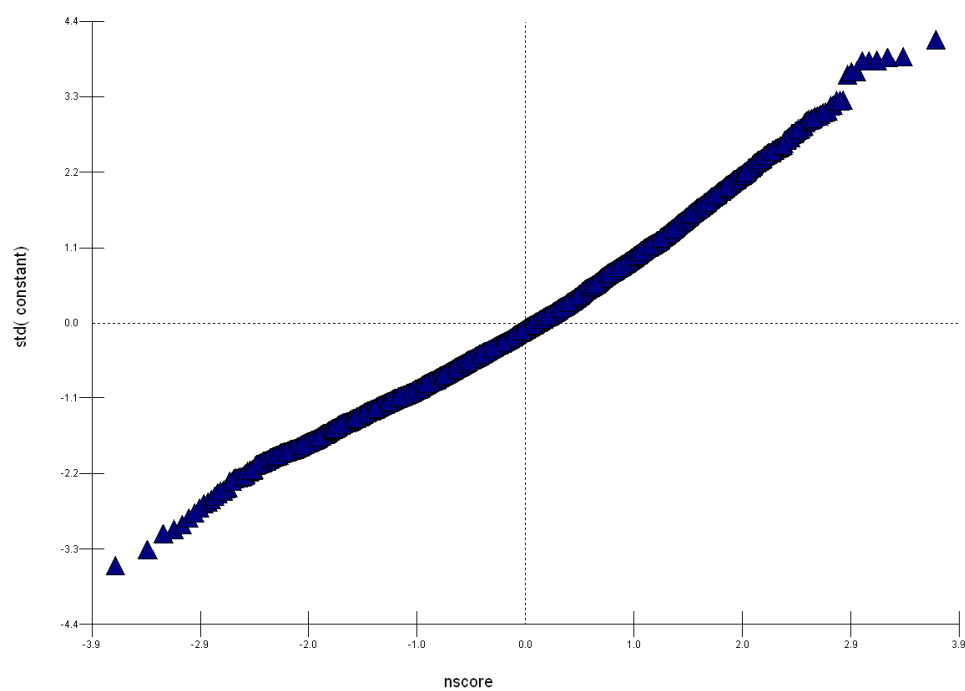
THANK YOU FOR COMPLETING THIS QUESTIONNAIRE. PLEASE RETURN IT TO YOUR TEACHER.

Appendix 5 – Data requirements

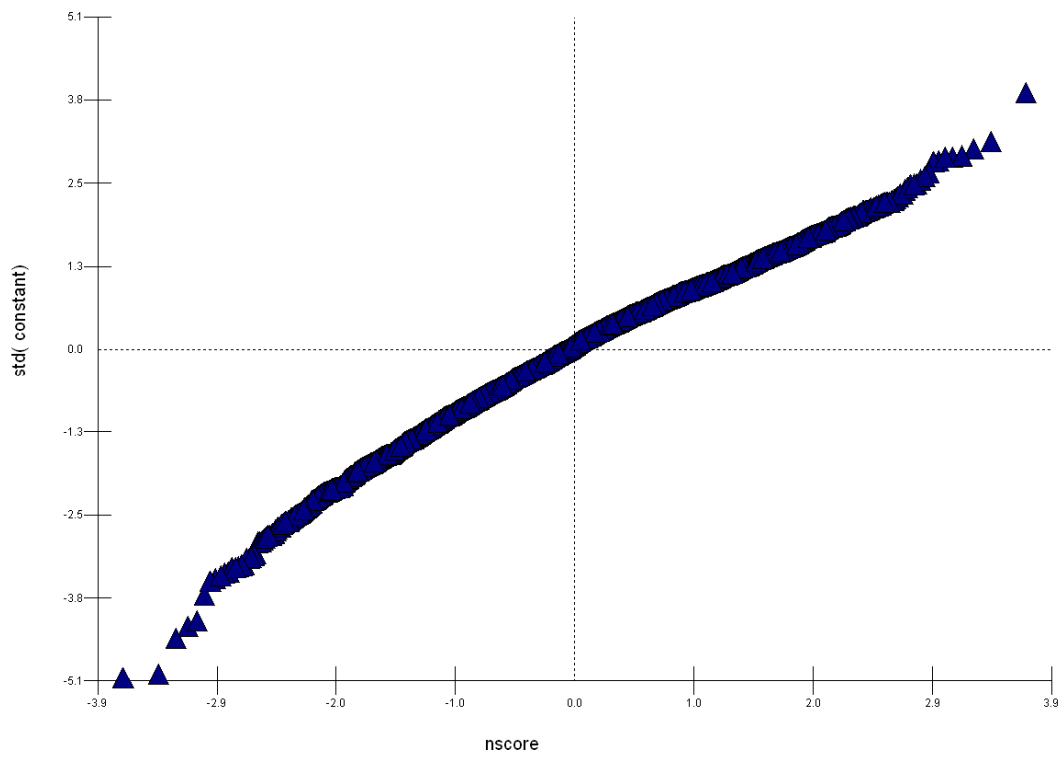
Standardised residuals plotted against Normal scores of standardised residuals (Total emotional literacy: ELAI)



Standardised residuals plotted against Normal scores of standardised residuals (Total difficulties: SDQ)



Standardised residuals plotted against Normal scores of standardised residuals (Pro social behaviour: SDQ)



Appendix 6 – Degrees of freedom

Degrees of freedom for multilevel modelling are calculated on the basis of:

Number of units at level – number of predictors – 1

For instance, for level two (school units) this is equal to:

Number of schools – number of predictors – 1

Level	Result		
	Empty	Background	Full
LA Level	24	23	23
School Level	41	36	35
Pupil Level:			
RQ1) Total emotional literacy (ELAI)	3305	3281	3281
RQ2) Total difficulties (SDQ)	4458	4434	4434
RQ3) Pro social behaviour (SDQ)	4506	4482	4482
Research Question 4	4454	4453	4452

Appendix 7 – Data Displays

Proximal impact on behaviour and social skills

Level / Theme	Comments
School Level Impact	
Impact on behaviour	<p>“Behaviour in Year 7, 9 and 11 (2008-2009) is significantly improved on previous years. Our adoption of SEAL as a major whole school priority can be credited with some of the reasons for improved attitudes and behaviour. SEAL influences focus sessions’, assemblies, PSHCE (Y9 and 8 2008-9, and all KS3 2009/10) and mentoring/watching.” (SEF, CS10, V5)</p> <p>“There have been less instances of [head of year] being called out to deal with a whole class... and he feels that the impact that SEAL has had on the whole class of pupils are aware and self aware...and that is impacting on the way that they conduct themselves in lessons.” (SL, CS6, V4)</p> <p>“I think its really helped them to improve their behaviour.” (LTS, CS6, V5)</p> <p>“Yes, I think it has probably improved ... just in the queuing aspect of coming in ... it used to be a lot of argy bargy, it all seems to go a to more smoothly now ... I think that’s probably part of all everybody being aware of everybody else.” (LTS, CS7, V4)</p>
Impact on pupil – teacher relations	<p>“[The students] seem to be able to know how to go and access support when they need it more. It’s more almost like its okay to say how you feel or, or discuss it with a teacher ... I just think it’s moved relationships on.” (SL, CS3, V5)</p> <p>“Speaking from my point of view in my classroom I um and you can just see the relationships pupil / pupil, pupil / teacher the whole group, its different.” (T, CS6, V5)</p>

	<p>“Its more a whole school cause everyone treats each other like really well.” (PFG, CS7, V5)</p> <p>“I also think that it led to better relationships between students and teachers I think there was that aspect of that that has improved. It was never bad but I think it has developed and improved.” (SL, CS8, V5)</p>
Pupil Level Impact	
Impact on empathy	<p>“Whilst working with a youth worker discussing knife crime and particularly a recent fatal stabbing, Two of the youths involved in SEAL amazed the youth worker by taking on the perspective of the victim and his different family members.” (YW, CS10, V4)</p>
Impact on behaviour	<p>“31 students identified as high to medium behavioural problems are mentored using weekly SEAL targets. Progress for 15 students judged good or better.” (SEF, CS10, V5)</p> <p>“I had one group of six girls who poor behaviour and difficult relationships and I have seen improvement in those girls ... four girls have really seemed to calm down and are responding in a more positive way.” (LTS, CS6, V5)</p>
Impact on social skills	<p>“Interviewer: Do you know when you've learnt about social skills and empathy and that do you use those skills? Pupil: Definitely yeah 'cause I feel much more confident since I've come to High School... I've learnt much more about it. Pupil2: You get better with you social skills.” (PFG, CS10, V5)</p> <p>“Interviewer: Do you do teamwork differently? P5: Yeah I would say I think everyone's improved...if you're a good team worker a good team player it will be like that... P2: how to work in groups.”</p>

	<p>(PFG,CS5,V5)</p> <p>“You get to understand how other people feel like so it kind of helps to build like relationships and stuff cause you know how they feel. I was going to say um you're more aware of how people feel around you, what you do how it affects things.”</p> <p>(PFG, CS7, V5)</p>
<p>Impact on pupil – parent relations</p>	<p>“[After a pupil-parent workshop for targeted children] every child without fail kissed their parent at the door...now you don't see that in secondary school.”</p> <p>(SL, CS4, V4)</p> <p>“If you didn't use the skills like people, you'd have a lot more fights and a lot more arguments.”</p> <p>(PFG, CS8, V5)</p>
<p>Impact on pupil teacher relations</p>	<p>“There was one PLTS that said at the end of this lesson I will not be afraid to go to the teacher if I need to. ... Then the next day I did actually go to her.”</p> <p>(PFG, CS5, V5)</p> <p>“We recently had a classroom that was painted because the girls said ‘its just horrible’ and it was and one of our buildings managers just happened to be walking past the classroom. The girls just dragged him in and gave him a round of applause. I don't think that would have happened prior to SEAL.”</p> <p>(SL, CS7, C4)</p>

Distal impact on favourable outcomes

Level / Theme	Comments
School Level Impact	
Negative impact	<p>“If I’m being totally honest, I think if anything um students are a bit too vocal... Some students can take advantage of that and I think they think its okay to say things that are maybe not appropriate to us. I think to question a teacher’s judgment I think it starts to get a little bit, you know, sort of bit blurry ... below the line.” (T, CS8, V5)</p>
Impact on exclusions	<p>“We have taught SEAL to the year 8, the one thing I would definitely say is we have had a reduction in exclusion.” (SL, CS8, V5)</p> <p>“We’ve had I think just one or two exclusions... with the current year seven... they’d be normally ten, fifteen ... We’ve done analysis... so we know year sevens are very good.” (SL, CS10, V4)</p> <p>“There has been a big reduction in exclusion rates cause at one point, although I’m the inclusion manager I was spending a lot of my time excluding students... and that has dropped dramatically... So I think overall the work in the school on SEAL is working.” (SMT, CS10, V4)</p>
Impact on staff	<p>“I don’t use SEAL all the time but then again talking to students’ maybe I used to shout a lot, maybe I stopped that.” (SL, CS2, V5)</p>
Unspecified impact	<p>“Its gone better than I thought it would really.” “SL, CS3, V5)</p> <p>“I think there’s been an impact” (SL, CS6, V4)</p>

	<p>“There’s been a definite improvement of the comparison from the start of the year, when we started the year, year 7 and some year 8 activities, if I went in now I’d definitely be able to see the difference.” (T2, CS6, V5)</p> <p>“I can’t put my finger on it but it just feels different.” (T2, CS6, V5)</p> <p>“Whether there’s a direct impact of SEAL...I can’t sort of say a hundred percent but I feel strongly that there is.” (SMT, CS7, V5)</p> <p>“I think it’s ...I think it’s definitely had an impact on assemblies.” (FT, CS7, V5)</p>
Impact on school climate	<p>“I think you’ll probably find as you go round that there’s a decent atmosphere, so that’s how I would evaluate it.” (SL, CS2, V5)</p> <p>“Our numbers [enrolled] for this year were up... so obviously you know, you’ve got to look and I’m sure that [SEAL] was part of it.” (SL, CS4, V4)</p>
Pupil Level Impact	
Unspecified impact	<p>“I do think in terms of individual responses from groups of pupils or individual pupils yeah I think it has helped.” (T1, CS6, V5)</p> <p>“Yeah it seems to be working. How it works with them between [the pupils] I don’t think we really get to see that angle.” (LTS, CS7, V4)</p>
Impact on emotional literacy	<p>“The impact it has had is that pupils are able to talk about their own behaviour much more articulately and so pupil’s emotional literacy or emotional intelligence as well has developed partly as a result.”</p>

	(SL, CS6, V5)
Level / Theme	<p>Comments</p> <p>"In the lesson if you see your PLTS objective then you kind of sort of know what to do like try to achieve so it gives you something to work up to."</p>
Impact achievement attainment	<p>on /</p> <p>(PFG, CS5, V5)</p> <p>"Like work together. Like if you work together you can accomplish a bit more so if you work together you can be better in that subject."</p> <p>(PFG, CS5, V5)</p> <p>"I think within their learning that it has had an impact on pupils."</p> <p>(SL, CS6, V4)</p>
Impact vocabulary	<p>on</p> <p>"The head of year seven recently commented on the fact that pupils were starting to use the language of emotional and social understanding."</p> <p>(SL, CS6, V4)</p> <p>"I was teaching a sixth form class ... and this girl started saying ... 'this is really along the lines of empathy'. I don't think she probably would have used that context and that vocabulary if she hadn't met SEAL through her role as a peer mentor."</p> <p>(SL, CS7, V4)</p>

Lack of impact

Impact of Other Initiatives	<p>“You don’t know whether it’s SEAL or something else that’s had that impact.” (LA Authority interview)</p>
School Level Impact	
No observable impact	<p>“I wouldn't say everybody um ... but in terms of seeing a whole school shift I personally haven't seen that.” (T, CS6, V5)</p> <p>“I’d struggle to put my finger on it, that’s SEAL at work [at school].” (SL, CS10, V4)</p> <p>“I think it subtle, you know, it’s very subtle and gradual.” (SL, CS10, V5)</p> <p>“I feel like I honestly feel like I’ve failed [laughter] I really have feel I do I feel like I’ve failed on this.” (SL, CS2, V5)</p> <p>“I don’t think in a conscious way at the moment its having an impact on my teaching.” (FT, CS7, V5)</p> <p>“It’s difficult to measure impact and you know we can look at behaviour logs, well that would just show the same as ever.” (SL, CS8, V4)</p> <p>“I don’t know any different...thinking about other classes I have taught um no not really... I just don’t know if it’s having the overall impact that we think it’s going to have.” (T, CS8, V5)</p> <p>“I don’t think anything’s different than what it used to be.” (T, CS8, V5)</p>

	<p>“From what I’ve seen so far I can’t see that it’s making a huge difference.” (T2, CS8, V5)</p> <p>“I mean no, it may have done to a certain amount of children...but not, not the others.” (LTS, CS8, V5)</p>
<p>Difficulty in measuring impact</p>	<p>“It’s very difficult to assess, you know.” (SL, CS10, V5)</p> <p>“I think it’s very difficult to measure whether it actually has an impact on attainment. To actually measure that? I don’t think you can.” (SL, CS7, V5)</p> <p>“It’s your nature of the school and you can’t quantify that.” (SL, CS7, V5)</p> <p>“The behaviour of that year group is better than another year group in the past in fact I would say no it isn’t. Um so I don’t know how you would actually show that.” (SL, CS8, V4)</p>
<p>Impact of other initiatives</p>	<p>“Our results are going up you can’t say that’s to do with SEAL [It is] very difficult to unpick exactly what impact SEAL has had because as I said earlier its part of a whole raft of different things that we’re trying.” (SL, CS10, V5)</p>
<p>delay in observing impact</p>	<p>“Obviously it’s too soon to say whether there’s going to be any change in that because it’s going to take a while to work through.” (SL, CS10, V5)</p>

Appendix 8 – Example feedback to schools

The University of Manchester

Secondary SEAL Evaluation
Feedback for <<example>> School

The responses of the year 8 pupils of <<example>> School are summarised in this feedback report. This feedback is unique to <<example>> School and provides a comparison with a nationally representative sample of schools also involved in the Secondary SEAL evaluation.

The University of Manchester will not distribute this data to any other party; however, you are welcome to share this report with others. All feedback is at school level to protect individual pupil's privacy.

Thank you for your continued participation in the Secondary SEAL evaluation.

Format of the Report

Two different questionnaires were used to collect data from the pupils, the "*Emotional Literacy: Assessment and Intervention*" questionnaire (ELAI) and the "*Strengths and Difficulties Questionnaire*" (SDQ).

The ELAI is a measure of pupils' emotional literacy and is a composite of their self-reported motivation, self awareness, self regulation, empathy and social skills. A typical item is "*I try to listen to other people's views even when I think they are wrong*". Higher scores on the ELAI are indicative of greater emotional literacy.

The SDQ is a measure of pupils' mental health. It provides a measure of total difficulties which represents pupils' self-reported peer-problems, hyperactivity, conduct problems and emotional symptoms. A typical item is "*I worry a lot*". Higher scores on the SDQ total difficulties scale are indicative of greater mental health problems.

The SDQ also provides a measure of pro-social behaviour. A typical item is "*I try to be nice to other people, I care about their feelings*". Higher scores on the SDQ pro-social behaviour scale are indicative of greater pro-social behaviour.

Enquiries to

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(0161 306 1763)

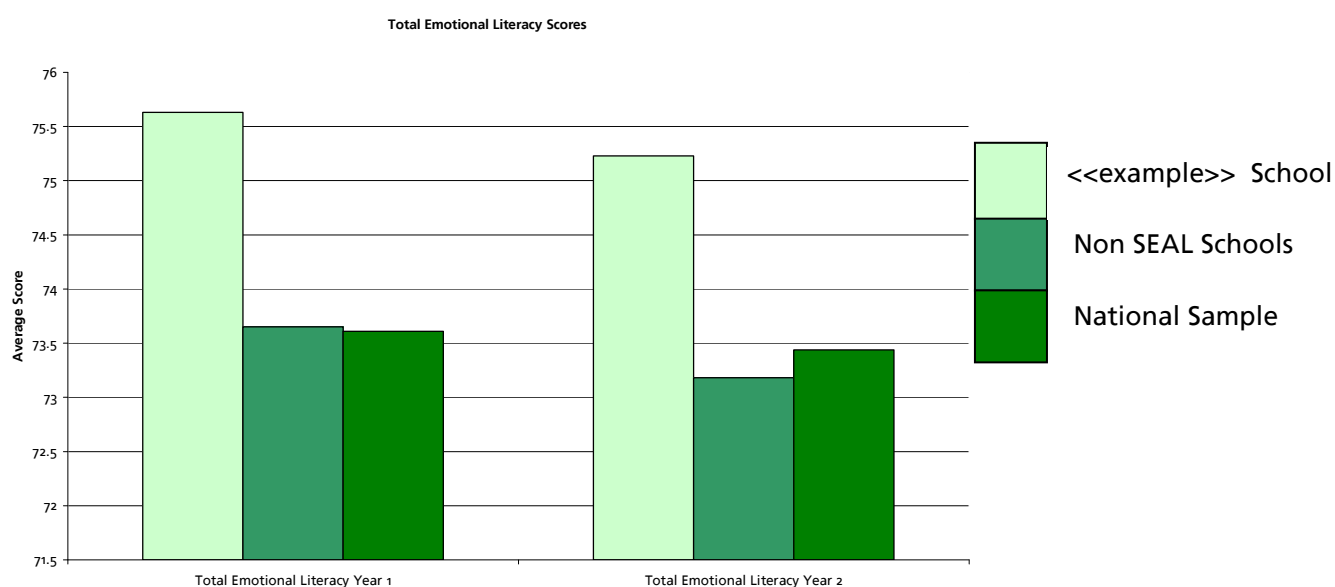
ann.lendrum@postgrad.manchester.ac.uk (0161 275 4570)

The profiles for pupils at <<example>> School are compared with the averages from both the national sample of forty-eight schools and the group of schools <<example>> School belongs to (SEAL or Non SEAL).

Emotional Literacy

This section analyses pupil responses to the ELAI questionnaire. Below you will find bar charts and tables comparing time 1 and time 2 scores for your pupils with those of other pupils in your group (e.g. SEAL or Non SEAL schools) and the overall national sample.

Higher scores are indicative of greater emotional literacy.



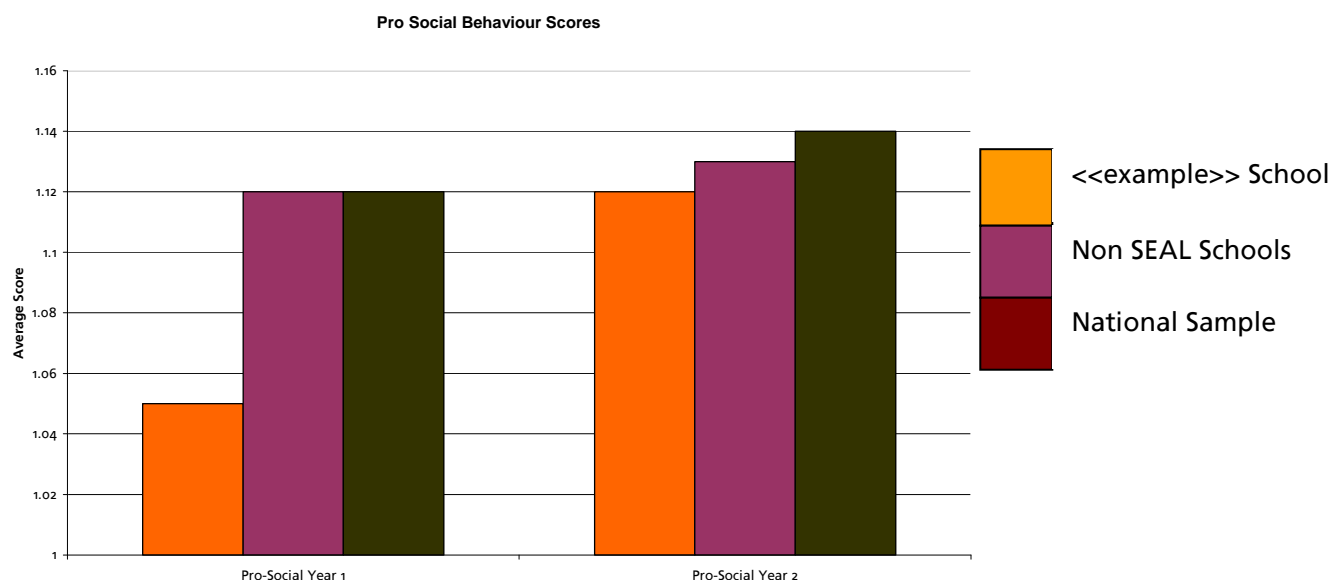
	Total Emotional Literacy score Time 1	Total Emotional Literacy score Time 2
<<example>> School	75.63	75.23
Non SEAL Schools	73.65	73.18
National average	73.61	73.44

Interpretation

Pro-Social Behaviour

This section analyses pupil responses to the SDQ pro-social behaviour scale. Below you will find bar charts and tables comparing time 1 and time 2 scores for your pupils with those of other pupils in your group (e.g. SEAL or Non SEAL schools) and the overall national sample.

Higher scores are indicative of greater pro-social behaviour.



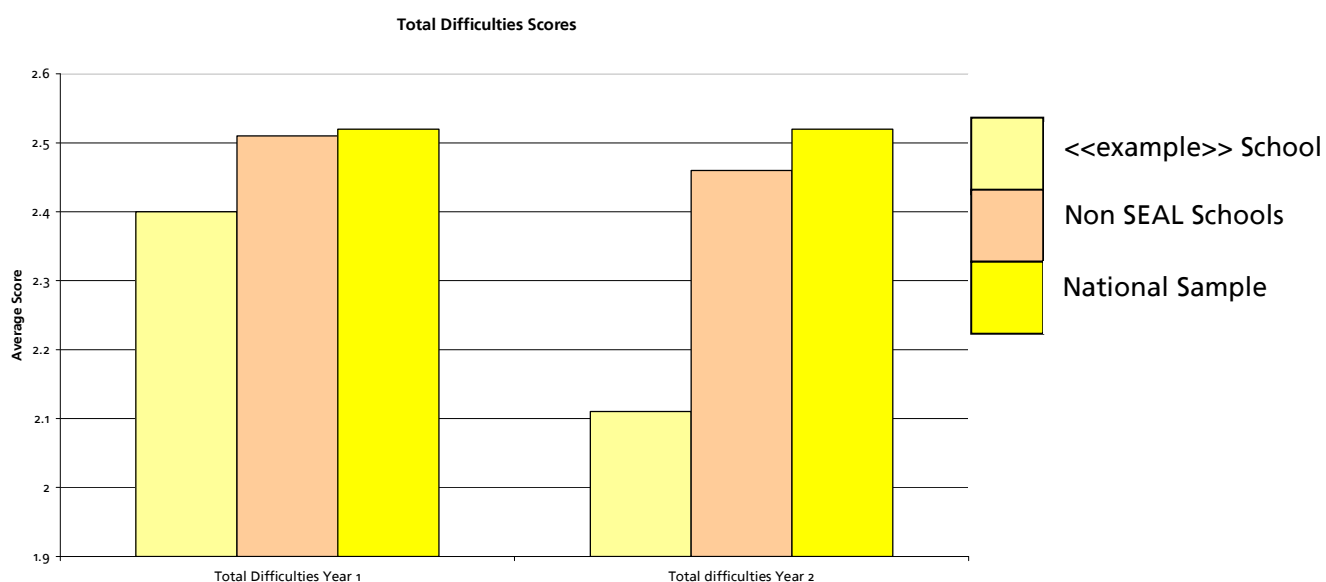
Extent of Pro-Social Behaviour	Pro Social average score Time 1	Pro Social average score Time 2
<example> School	1.05	1.12
Non SEAL Schools	1.12	1.13
National average	1.12	1.14

Interpretation

Total Difficulties

This section analyses pupil responses to the SDQ total difficulties scale. Below you will find bar charts and tables comparing time 1 and time 2 scores for your pupils with those of other pupils in your group (e.g. SEAL or Non SEAL schools) and the overall national sample.

Higher scores are indicative of greater mental health difficulties.



Extent of Total Difficulties	Total Difficulties average score Time 1	Total Difficulties average score Time 2
<example> School	2.40	2.11
Non SEAL Schools	2.51	2.46
National average	2.52	2.52



Our analysis shows that there is a **statistically significant decrease** in Total Difficulty scores between time 1 and time 2. These results **must be treated with caution** also the actual change observed is extremely small and represents a very small change on the scoring scale of the questionnaire.

