Movement Matters: Developing School Based Occupational Therapy Practice in Irish Post Primary Schools.

2019

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Declaration

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Christi
“Occupation does not lead directly to health or other physical outcomes.
What occupation does is make people better at living…”
Malcolm P. Cutchin
Summary

Occupational therapists face challenges of practice development when working in emerging settings. This study provides an understanding of the process of developing new practice in Irish mainstream post primary schools in areas of social disadvantage with adolescents identified by teachers as having social, emotional and behavioural difficulties (SEBD) that significantly interfered with their engagement in learning and in school. A school-based programme called ‘Movement Matters’ is the focus. This educational programme developed by two occupational therapists and a Physical Education teacher was designed for delivery by ‘Behaviour for Learning’ teachers as part of the collaborative work between the National Behaviour Support Service (NBSS), Department of Education and Skills and the Discipline of Occupational Therapy, Trinity College Dublin within a three tiered model of service delivery.

Aims and Methods

An embedded mixed method design was applied to three objectives. The first was to describe the development of the programme and to critique if and how the programme reflected core occupational therapy theory and values as stated in the vision for the service of supporting students in meaningful engagement in school (MacCobb 2012). These are person centred, occupation focused supports and interventions that are developed through collaborative relationships, in a context appropriate manner, within enhanced physical and social environments. A qualitative approach using matrix analysis was applied to 12 documentation sources such as peer reviewed journals, NBSS web based information, course manuals, and teacher training courses. A second objective was to analyse existing standardized student attitudinal and behavioural measures pre and post participation in the programme (quantitative) to 1) provide a profile of the students and 2) to see if these tools would capture changes. The ‘Strengths and Difficulties Questionnaire’ (SDQ) and ‘Pupil Attitude to Self and School’ (PASS) provide triangulated data from the student, parent and teacher related to 39 targeted students. The third objective was to map the professional reasoning process of the two occupational therapists that led to the programme development, and who trained, supported and observed the teacher led programme in use in the classroom. This was achieved by analysing qualitative data delivered through three semi structured group interviews, conducted over the course of a twelve-month period of the national pilot in 13 schools.
Main Findings

The mixed method approach was successful in meeting the study objectives. All the key principles as described by MacCobb (2012) are evident in the critique confirming than occupational therapy theory has been applied in this programme development in a school setting for marginalised students as part of a three tiered model of service delivery. The PASS and SDQ data created a profile that provides insight into how 39 students from an underserved population (SEBD) experience school. This student profile differs from a UK national study norms, particularly around self-efficacy, self-determination and motivation as learners, indicating a less positive experience in school.

The clinical reasoning demonstrated by the occupational therapists in the integration of theory to practice was at an advanced level, giving an understanding of ‘why and how’ the programme was developed. The importance of reflection and ongoing engagement with theory for practice development was evident. Although not an efficacy study per se, therapists’ observations and teacher and student self-reports completed during each session as part of the learning approaches, were reported as capturing improvements. Importantly the co-occupation activities of the programme created a social environment which promoted collaborative relationships between teachers and students, acknowledged as central to effective interventions with students with SEBD.

The most relevant finding to emerge from this study on practice development was that a novel interdisciplinary scholarship of practice approach of collaboration, reflective practice and interdisciplinary professional reasoning between teachers and occupational therapists, an academic department and a national educational support service generated new knowledge and methods of programme development for students with complex needs (Fitzgerald and MacCobb, 2017).

Key Words: Occupational Therapy, Inter-professional Collaboration, Scholarship of Practice, Social Emotional Behavioural Difficulties, Self-regulation, Post Primary Schools.
List of Abbreviations

ADHD: Attention Deficit Hyperactivity Disorder
AP: Alert Programme
BfL: Behaviour for Learning
CD: Conduct Disorder
CI3T: Comprehensive, Integrated, Three-Tiered Model of Prevention
DEIS: Delivering Equality of Opportunity in Schools
EBD: Emotional and Behavioural Disorder
MM: Movement Matters
NBSS: National Behaviour Support Service
NCSE: National Council for Special Education
ODD: Oppositional Defiance Disorder
OT: Occupational Therapy
PASS: Pupil Attitude to Self and School
PBIS: Positive Behavioural Interventions and Supports
PRN: Practice Research Network
RtI: Response to Intervention
SDQ: Strengths and Difficulties Questionnaire
SEBD: Social Emotional and Behavioural Difficulties
SESS: Special Education Support Service
SBP: Student Behaviour Plan
Table of Contents

Declaration....................................................................................................................i
Acknowledgements ......................................................................................................ii
Summary.......................................................................................................................iv
Table of Contents.......................................................................................................... vii
List of Figures................................................................................................................xii
List of Tables................................................................................................................xiv
1 Chapter 1: Introduction to the Study ...................................................................... 1
  1.1 The Setting............................................................................................................. 1
  1.2 The Problem ......................................................................................................... 2
  1.3 Purpose Statement .............................................................................................. 2
  1.4 Study Objectives ................................................................................................. 2
  1.5 Contribution to the Profession .......................................................................... 4
  1.6 Thesis Structure .................................................................................................. 5
  1.7 Definition of Terms ........................................................................................... 6
2 Chapter 2: The Context ............................................................................................. 7
  2.1 Introduction ......................................................................................................... 7
  2.2 Background ......................................................................................................... 7
    2.2.1 The NBSS Model of Support ....................................................................... 8
    2.2.2 The NBSS Research Approach .................................................................. 10
    2.2.3 The Behaviour for Learning Programme .................................................. 11
    2.2.4 The ‘DEIS’ Programme ............................................................................. 12
    2.2.5 Educational Disadvantage ....................................................................... 14
    2.2.6 Identification of Special Educational Needs in the Context of Disadvantage 14
    2.2.7 Evaluation of the DEIS Programme ........................................................... 18
    2.2.8 Access to Health Service Support ............................................................... 19
    2.2.9 Recent developments in Irish Educational Policy ...................................... 20
  2.3 The University and NBSS Partnership ................................................................. 22
    2.3.1 Educational Philosophy of the BSc. in Occupational Therapy (2010) .......23
    2.3.2 The Academic Partnership Champion .........................................................25
    2.3.3 Influence of the NBSS partnership: Curriculum Development and Research in the Academic Department. .................................................................26
  2.4 Chapter Summary ...............................................................................................27
3 Chapter 3: Literature Review .....................................................................................28
  3.1 Introduction .........................................................................................................28
  3.2 Part One .............................................................................................................29
  3.3 Social, Emotional and Behavioural Difficulties ...................................................29
    3.3.1 Definition.....................................................................................................29
    3.3.2 Prevalence...................................................................................................31
    3.3.3 Teacher Perspectives on Social Emotional and Behavioural Difficulties.32
    3.3.4 Factors Influencing Teacher Perspectives on SEBD .................................32
    3.3.5 Shared Perspectives on SEBD..................................................................33
  3.4 Socio-Economic Factors .......................................................................................35
3.4.1 Attachment ............................................................................................................36
3.4.2 Trauma and Attachment .......................................................................................37
3.4.3 Attachment, Learning and Behaviour .................................................................40
3.4.4 Parental Factors ....................................................................................................40
3.4.5 Co-Regulation ......................................................................................................41
3.4.6 Parent-Child Co-Regulation ................................................................................42
3.4.7 Co-Regulation and Learning ...............................................................................43
3.4.8 Teacher-Student Co-Regulation .........................................................................43

3.5 Sensory Integration Theory ....................................................................................46
3.5.1 Definition .............................................................................................................46
3.5.2 The Senses ..........................................................................................................47
3.5.3 Sensory Processing Disorder ...............................................................................49
3.5.4 Neurological Thresholds .....................................................................................49
3.5.5 The Influence of Social and Environmental Factors .........................................50
3.5.6 A Framework for Understanding Behaviour .....................................................50
3.5.7 Modulation and Arousal .....................................................................................51
3.5.8 Self-Regulation of Arousal .................................................................................52
3.5.9 Attention Deficit Hyperactivity Disorder and Sensory Modulation Disorder. .53
3.5.10 Anxiety ..............................................................................................................55
3.5.11 Evidence Base ..................................................................................................55
3.5.12 Physical Exercise and Student Attention ..........................................................56

3.6 Occupational Therapy in the School Setting ..........................................................57
3.6.1 Models of Service Delivery ...............................................................................57
3.6.2 Collaboration .......................................................................................................58
3.6.3 Shared Philosophical Perspectives ...................................................................61
3.6.4 Occupation Centred Practice ............................................................................63
3.6.5 Occupational Therapy and Social, Emotional and Behavioural Difficulties. .64

3.6.6 The Student Experience ......................................................................................65

3.7 Well-being ..............................................................................................................68
3.7.1 Well-being in Post Primary Schools in Ireland ...............................................68
3.7.2 Self-esteem .........................................................................................................68
3.7.3 Belonging ............................................................................................................69
3.7.4 Self Determination .............................................................................................70
3.7.5 Well-being and Meaningful Occupation .........................................................72

3.8 Summary of Part One .........................................................................................73

3.9 Part Two .................................................................................................................74

3.10 Clinical Reasoning .................................................................................................74
3.10.1 Definition ..........................................................................................................74
3.10.2 Problem Solving ...............................................................................................75
3.10.3 A Cognitive Process .........................................................................................76
3.10.4 Modes of Reasoning .......................................................................................76

3.11 Scholarship of Practice .........................................................................................77
3.11.1 Key Elements ...................................................................................................78
3.11.2 Knowledge Generation .....................................................................................78
3.11.3 Bridging the Academic-Practice Gap ............................................ 79
3.11.4 Future Directions ............................................................................ 80
3.11.5 Practice Development ...................................................................... 80
3.12 Research Paradigms in Knowledge Generation ................................... 81
  3.12.1 Positivist and Post-Positivist Views ............................................. 81
  3.12.2 Evidence Based Practice ............................................................... 82
  3.12.3 The Academic-Practice Gap: Research Perspectives ................. 84
  3.12.4 Practice Based Evidence ............................................................... 85
  3.12.5 Practice Based Research Approaches ........................................ 85
3.13 Chapter Summary ............................................................................... 90
  3.13.1 So what? ....................................................................................... 90
4 Chapter 4: Methodology .......................................................................... 91
  4.1 Introduction ....................................................................................... 91
  4.2 Reflexivity ......................................................................................... 91
  4.3 Research Aim .................................................................................. 95
    4.3.1 Research Objectives ................................................................... 95
  4.4 Philosophical Worldview .................................................................. 96
  4.5 Mixed Method Research .................................................................. 97
    4.5.1 Rationale ................................................................................... 97
    4.5.2 Design ...................................................................................... 99
  4.6 Movement Matters Programme Description .................................... 103
    4.6.1 Typical Session Outline .............................................................. 103
    4.6.2 Session Plan Examples ............................................................... 107
    4.6.3 Teacher Recruitment, Training and Support ............................. 110
    4.6.4 Student Selection ...................................................................... 111
  4.7 Data Collection ................................................................................ 114
    4.7.1 Ethical Considerations ................................................................ 116
    4.7.2 Participants ................................................................................. 118
    4.7.3 Quantitative Measures: Research Objective 2 ....................... 118
  4.8 Pre measures ................................................................................... 119
  4.9 Post measures ................................................................................ 119
    4.9.2 Qualitative Methods: Research Objectives 1 & 3 ................. 135
  4.10 Reflexivity ...................................................................................... 152
    4.10.1 The 'Research Journey' ............................................................. 152
    4.10.2 Researcher and Participant ....................................................... 152
    4.10.3 Reviewing themes ................................................................... 154
    4.10.4 Refining the study aim .............................................................. 155
    4.10.5 So what? ................................................................................. 156
  4.11 Chapter Summary .......................................................................... 157
5 Chapter 5: Results ................................................................................ 158
  5.1 Introduction .................................................................................... 158
  5.2 Objective One: Description and Critique of Practice Development .... 161
    5.2.1 Introduction ............................................................................ 161
    5.2.2 Step One: Description of Practice Development .................... 161
    5.2.3 Phase One (2008-2011) ............................................................ 162
    5.2.4 Phase Two (2011-2013) ............................................................ 163
5.8.30 Core Level 3 Programme ..........................................................323
5.8.31 Summary Interpretation.............................................................324
5.9 Summary of Objective Three .........................................................326
5.10 Chapter Summary .......................................................................327
6 Chapter 6: Discussion .....................................................................329
  6.1 Introduction .................................................................................329
  6.2 Objective 1 ................................................................................329
     6.2.1 The Behaviour for Learning Programme ..................................330
     6.2.2 Practice Development ...............................................................338
  6.3 Objective 2 ................................................................................339
     6.3.1 Pre and Post Comparison ..........................................................339
     6.3.2 Student Participant Profile .......................................................340
     6.3.3 Reflections on Outcome Measurement ......................................341
  6.4 Objective 3 ................................................................................345
     6.4.1 Scholarship of practice ..............................................................345
     6.4.2 Future directions .................................................................353
  6.5 Limitations ................................................................................356
     6.5.1 Role of the Researcher in the Qualitative Aspects of the Study ..356
     6.5.2 Validity of the Quantitative Aspect ..........................................358
7 Chapter 7: Conclusion ....................................................................361
  7.1 Background .................................................................................361
     7.1.1 Summary of Main Findings ......................................................361
  7.2 Recommendations ......................................................................364
8 References ......................................................................................367
List of Figures

Figure 1. NBSS Model of Support .................................................................................. 8
Figure 2. Positive Behavioural Interventions and Supports - PBIS (Sugai & Horner, 2002), ................................................................. 9
Figure 3. Comprehensive, Integrated, Three-Tiered Model of Prevention (Lane et al., 2009). .......................................................... 9
Figure 4. The Process of Sensory Reception to Integration .............................................. 47
Figure 5. The Environmental Matrix Model (Richter and Oetter, 1990). .......................... 51
Figure 6. Model of Sensory Processing Patterns (Dunn, 1997). ................................. 53
Figure 7. The 'Knowledge Creating System' described by Senge & Sharmer (2001)... 79
Figure 8. The practice and research journey timeline .................................................. 93
Figure 9. Embedded Mixed Method Design. ................................................................ 100
Figure 10. The Movement Matters Team ................................................................. 110
Figure 11. Study Overview ......................................................................................... 115
Figure 12. Self-rated SDQ for 11-17 year olds. .............................................................. 121
Figure 13. SDQ for parents or teachers of 4-17 year olds ............................................. 122
Figure 14. Follow-up questions and impact supplement for self-completion by 11-17 year olds. ................................................................. 125
Figure 15. Follow-up questions and impact supplement for the parents of 4-17 year olds. ................................................................. 126
Figure 16. Follow-up questions and impact supplement for the teachers of 4-17 year olds. ................................................................. 128
Figure 17. Sample PASS summary report ................................................................. 133
Figure 18. The sequential process of thematic development influencing each subsequent group interview.................................................. 145
Figure 19. Key elements of the development and evaluation process ......................... 161
Figure 20. Average Factor Scores from UK PASS Study ............................................ 198
Figure 21. Results of Factor 1 (Feelings about School) .............................................. 199
Figure 22. Results of Factor 2 (Perceived Learning Capability) .................................. 201
Figure 23. Results of Factor 3 (Self Regard as a Learner) ......................................... 203
Figure 24. Results of Factor 4 (Preparedness for Learning) ....................................... 204
Figure 25. Results of Factor 5 (Attitude to Teachers) ............................................. 206
Figure 26. Results of Factor 6 (General Work Ethic) ............................................... 208
Figure 27. Results of Factor 7 (Confidence in Learning) ........................................... 210
Figure 28. Results of Factor 8 (Attitudes to Attendance) ....................................... 212
Figure 29. Level 3 students days absent September 1st to April 24th (2014/2015). ... 213
Figure 30. Results of Factor 9 (Response to Curriculum Demands) ......................... 215
Figure 31. Results of Total Difficulties ...................................................................... 220
Figure 32. Results of Emotional Symptoms ......................................................... 221
Figure 33. Results of Conduct Problems ................................................................. 222
Figure 34. Results of Hyperactivity ......................................................................... 223
Figure 35. Results of Peer Problems ...................................................................... 224
Figure 36. Results of Prosocial Behaviour ............................................................... 225
Figure 37. The sequential process of thematic development influencing the questioning in the subsequent group interview. .................................................................238
Figure 38. Overview of themes from the First Semi-Structured Group Interview.......241
Figure 39. Overview of themes from the Second Semi-Structured Group Interview...267
Figure 40. Overview of themes from the Third Semi-Structured Group Interview .....297
Figure 41. Core elements of self-determination theory applied to the Movement Matters programme.................................................................337
Figure 42. Knowledge generation principles (Kielhofner, 2005b) applied to practice. 348
Figure 43. Key elements of Scholarship of Practice (Hammel et al., 2002) applied to the practice setting of the NBSS.................................................................350
Figure 44. The ever evolving cycle of practice informing scholarship and scholarship influencing practice.................................................................353
List of Tables

Table 1. Behavioural Characteristics of Attention Deficit Hyperactivity Disorder and Sensory Modulation Disorder. ............................................................ 54
Table 2. The Modes of Clinical Reasoning identified by Mattingly (1994) and Fleming (1991). ......................................................................................... 77
Table 3. The Rationale for the Study Objectives .................................................. 101
Table 4. Typical Session Outline ........................................................................ 103
Table 5. The Eight Measures that comprise a 'complete data set' ....................... 119
Table 6. The 9 PASS ‘factors’. ........................................................................... 129
Table 7. Matrix Template .................................................................................. 139
Table 8. Sample table of qualitative data analysis influenced by IPA ................ 149
Table 9. Matrix Analysis of the Alert Programme Development ....................... 178
Table 10. Matrix Analysis of the Movement Matters Programme Development .... 185
Table 11. PASS Completion Rate ...................................................................... 195
Table 12. SDQ Parent Completion Rate .............................................................. 195
Table 13. SDQ Teacher Completion Rate ........................................................... 196
Table 14. SDQ Student Completion Rate ............................................................ 196
Table 15. Student Participant Characteristics .................................................... 196
Table 16. Descriptive statistics of the nine factors that make up the PASS measure. 197
Table 17. SDQ Student Data (pre intervention) .................................................. 217
Table 18. Range of scores for each SDQ ‘scale’ .................................................. 218
Table 19. Mean scores for SDQ scales (self-report) from UK study (Meltzer et al, 2000) .......................................................... 218
Table 20. Results of the Kolmogorov Smirnov/Shapiro Wilks test ..................... 228
Table 21. Results of the Paired Sample T-tests for Factors 2, 4, 5, 6 and 7 ............ 229
Table 22. Results of the Wilcoxon Signed Rank Sum Test for Factors 1, 3, 5 and 9 . 229
Table 23. SDQ Student Completion Rate ............................................................ 230
Table 24. Pre and Post intervention SDQ (Student) comparison ......................... 230
Table 25. SDQ Parent Completion Rate ............................................................. 231
Table 26. Pre and Post intervention (Parent) comparison .................................. 231
Table 27. SDQ Teacher Completion Rate ........................................................... 232
Table 28. Results of the Paired Sample T-tests of normative Teacher pre & post data 232
Table 29. Results of the Wilcoxon Signed Rank Sum Test of non-normative Teacher pre and post data. .......................................................... 233
Table 30. Occupational Needs Framework (Doble & Caron-Santha, 2008) .......... 342
Table 31. Participation measures that can be used in the school setting............ 359
Chapter 1: Introduction to the Study

“Since the early days of occupational therapy, the focus of the therapeutic process has been to assist individuals with the problems of living” (Meyer, 1992, p.4). Occupational therapists could be considered expert problem solvers. Regardless of the setting, occupational therapists are expected to address the physical, social and/or cultural barriers to enable individuals to function to the best of their abilities and thrive as human beings.

1.1 The Setting

The setting of Irish mainstream post primary schools in areas of social disadvantage and students with social, emotional and behavioural difficulties (SEBD) confronts us with many ‘problems’. These are complex and intertwined in the social, cultural, economic and institutional environments of schools and communities in areas of disadvantage, poverty and deprivation (Cooper and Jacobs, 2011). Students encounter problems accessing the curriculum and being successful learners due to poor basic literacy and numeracy skills, attention difficulties and sensory processing difficulties manifesting in behaviour that challenges teachers, other students and school systems. If not addressed, this cycle of failure can lead to escalation in challenging behaviour putting students at risk of disengagement and/or expulsion from school and ultimately occupational deprivation (Marczuk, Taff and Berg, 2014). At the time of this study, there was no in-school occupational therapy service in mainstream post-primary schools supporting students with SEBD other than that of the NBSS, comprising of two full-time therapists and one part-time delivering a nationwide service.

The focus of this study is on the development of practice in an area with little evidence in the international literature. Manley, McCormack & Wilson, (2008) describe practice development as a continuous process affecting the culture of practitioners that fosters learning and brings about transformation of individual and of team practices. It is enabled by individuals and teams who blend personal qualities and creative imagination with practice skills and practice wisdom. The quality of these skills and wisdom may be difficult to capture, however, the reflexive thinking associated with professional practice can offer valuable insights into how and why therapists think and act. This has been defined as ‘clinical reasoning’ (Unsworth, 2011). Harries and Duncan (2009) drew on material from cognitive continuum theory (Hammond and Brehmer, 1973) and dual processing theory (Stanovich and West, 2000) to demonstrate that thinking systems are neurologically
different, with one focusing on the ‘art’ of clinical reasoning and the other on the ‘science’ of decision making. Harries and Duncan (2009) also observed that in occupational therapy publications, the term clinical reasoning was used to cover all thinking processes that involve reasoning, problem solving, judgment and decision making. This concept of clinical/professional reasoning is more fully discussed in a later chapter reviewing the literature.

1.2 The Problem

It is the paucity of literature for occupational therapists working in this emerging area of practice that inspired this research project. At the time of the establishment of the occupational therapy service, there was little evidence informed practice to guide a novice therapist working with adolescents with SEBD in mainstream post primary schools. The challenge was to apply existing knowledge from multiple disciplines to the setting, informed by ongoing evaluation and research and mediated by the clinical reasoning skills of the occupational therapists themselves. For funding for the fledgling service to continue, there was also a requirement to conduct research in the area reflecting the unique contribution of occupational therapy to the adaptation of interventions and the development of new educational programmes for use by teachers for the benefit of students’ engagement in, and access to learning.

1.3 Purpose Statement

This study aims to understand the process of developing practice in an emerging context for occupational therapy by focusing on a recently developed programme, ‘Movement Matters’ within the National Behaviour Support Service (NBSS), Department of Education and Skills. Understanding is developed through the application of pragmatic and interpretative approaches. Pragmatism is concerned with applications, what works and the solutions to problems (Patton, 1990) while interpretive research is based on the assumption that social reality is not singular or objective, but is rather shaped by human experiences and social contexts (Bhattacherjee, 2012).

1.4 Study Objectives

The first question to be answered related to the contribution of occupational therapy theory applied in the Movement Matters programme. Does this student education programme offer unique perspectives of occupational therapy related to self-regulation in this group of
students in the context of the classroom? If so, this provides a rationale for the involvement of occupational therapy in the school setting for students with social, emotional and behavioural difficulties in areas of social disadvantage. In order to answer this question, the identification of need for and the development of the programme is described, and its structure and delivery is critiqued within core values of occupational therapy, and as relevant for the context area and as stated in the vision for the services by MacCobb (2012). These are person centred, occupation focused supports and interventions that are developed through collaborative relationships, in a context appropriate manner, within enhanced physical and social environments.

Standardized measures are used in all new teaching and learning initiatives by the NBSS as part of their evidence informed practice approach. The inclusion of this objective in the study was to examine the results of student attitudinal and behavioural measures before and after participating in the Movement Matters Programme in relation to their value for identifying change related to programme participation. This data would generate a profile of this student group and allow comparison against a large UK student sample.

In the absence of an evidence based practice literature, examining the ‘clinical’/professional reasoning of therapists is of value to the profession so as to understand how practice can develop in new areas. Thus the third objective was to explore the professional reasoning process of the occupational therapists that developed and observed the programme in use. This should make clear the theoretical underpinnings and the combining of the art and science of practice related specifically to this programme development in this setting.

These objectives were achieved using an embedded mixed method design. Qualitative data was collected at the same time as the experimental quantitative data to develop a more complete understanding of the research problem than one method alone (Creswell, 2014). The first element of the study describes the journey of the development of the Movement Matters programme as a progression from the adapted Alert Programme (NBSS, 2015b). This was an essential first step and main contribution to identifying the need for and methodology of the Movement Matters programme. Documentation relating to NBSS occupational therapy interventions published on the NBSS website and in international peer reviewed publications between 2011 and 2017 was collected. This included manuals, training notes, reports, peer reviewed papers, a book chapter and information leaflets. A matrix analysis (Averill, 2002) was then applied to this data to critique the practice as adhering to occupational theory and values as stated in the vision.
for the services by MacCobb (2012). These are person centred, occupation focused supports and interventions that are developed through collaborative relationships, in a context appropriate manner, within enhanced physical and social environments.

The second element of the study utilised a pre-experimental quantitative method to measure 39 students’ behaviour and attitudes before and after completing the Movement Matters Programme to establish whether the tools captured change in these scores, following completion of the programme. The standardised measures were the Strengths and Difficulties Questionnaire (SDQ) and Pupil Attitude to Self and School (PASS). These are widely accepted in mainstream education as a student profiling tool (Parliament, 2010), and as a recognised method of evaluating interventions (Mathai et al., 2003; Ford et al., 2009; Van Roy et al., 2008; Palmieri and Smith, 2007; Richter et al., 2011). This data was sourced from the participating students, their parents and teachers and was provided by the NBSS in anonymised format.

The third element of the study aimed to explore the professional reasoning process of the two occupational therapists that together with a physical education teacher from the NBSS developed and observed the programme in use. The teacher did not wish to participate in the study. This was achieved by analysing qualitative data delivered through three semi-structured group interviews over a 12-month period during their delivery and support of the national pilot of the programme in 13 schools nationwide. The method of Interpretative Phenomenological Analysis (IPA) (Smith et al., 2009) influenced analysis of this qualitative data which aimed to provide detailed description of the practice development journey.

1.5 Contribution to the Profession

This study contributes a new knowledge on occupational therapy practice development in Irish mainstream post primary schools with students with social emotional and behavioural difficulties, a population which is underserved internationally by the profession (Marczuk et al., 2014). It proposes a new interdisciplinary model of knowledge generation in collaboration with teachers in school settings, within a partnership approach between a national educational support service and an academic department of occupational therapy. This study also challenges prominent views within the profession regarding use of evidence in practice and alternative approaches including practice based evidence are proposed.

This study is particularly timely in the context of in-school occupational therapy practice in Ireland with commencement of the Demonstration Project on In-school and Early Years
Therapy Support in the 2018/2019 academic year (DES, 2018). This is part of the government’s overall plan to make in-school occupational therapy support available to all schools under the National Council for Special Education’s multi-tiered continuum of support model (NCSE, 2018). This study is well positioned to make recommendations regarding the direction of in-school occupational therapy practice in Ireland as this broader practice context emerges.

1.6 Thesis Structure

Due to the distinctiveness of this practice setting for occupational therapists, this thesis focuses in detail on describing the context for the reader through a designated chapter. The Literature Review builds on the description of the context of the study, and adopts a narrative style and examines some of the most pertinent subject areas relating to the practice setting, the programme and the individuals involved in the study. The Methodology Chapter describes the pragmatic and interpretative approaches used to deliver the study objectives and informs the overall aim of the study through a mixed method design. The Results Chapter presents the findings of the study and is divided into three parts to reflect the study objectives. Part One presents the qualitative description and critique of the practice development process (objective one). Part Two reports the quantitative results of the standardised measures (objective two) and Part Three presents the qualitative results from the professional/clinical reasoning data of the occupational therapists (objective three). The researcher’s subjective interpretations of the data are offered throughout the Results Chapter for ease of reading while the Discussion Chapter merges the main findings of the study with the existing literature to uncover new knowledge in this field of occupational therapy. The main findings related to the research aims and objectives are synthesised. The chapter concludes with the study limitations and recommendations.
1.7 Definition of Terms

**Mainstream Post Primary Schools:** In Ireland, these schools serve students aged 12 to 18 years old who have completed their primary school education. Mainstream Post Primary Schools can also provide education to students with Special Educational Needs such as autism, Attention Deficit Hyperactivity Disorder (ADHD), Social, Emotional and Behavioural Difficulties (SEBD) and Mild General Learning Difficulties (MGLD).

**Social Emotional Behavioural Difficulties:** A group of children within an educational setting who present with disturbing and/or disruptive behaviour that interferes with social functioning and academic engagement (Cooper and Jacobs, 2011).

**School Based Occupational Therapy:** This term refers to interventions, supports and programmes that adhere to the theories and values of occupational therapy, delivered within the mainstream post primary school environment.

**Practice Development:** Practice development is a continuous process of developing practitioner-centred cultures. It is enabled by facilitators who authentically engage with individuals and teams to blend personal qualities and creative imagination with practice skills and practice wisdom. The learning that occurs brings about transformation of individual and team practices. This is sustained by embedding both processes and outcomes in service strategy (Manly, McCormack & Wilson, 2008).

**Collaborative consultative practice:** An interactive problem solving process that enables people with diverse expertise to generate creative solutions to mutually defined problems (Idol et al., 2000).

**Adapted Alert Programme:** A version of the original Alert Programme (Williams and Shellenberger, 1996) adapted for the mainstream Irish post primary school context by the NBSS occupational therapy team. This was the first application of a self-regulation programme in this mainstream education setting for students with SEBD.

**Movement Matters Programme:** A programme for students designed by occupational therapists and teachers based in sensory integration theory that aims to promote self-regulation of arousal and behaviour to enable more effective school participation.
Chapter 2: The Context

2.1 Introduction

As the study is about developing practice in an emerging area that has not been well described in the occupational therapy literature to date, the purpose of this section is to describe the unique practice context in detail so as to better understand the factors that allowed the development to take place.

2.2 Background

The background to this work involves the collaboration between the Discipline of Occupational Therapy, Trinity College Dublin and the National Behaviour Support Service (NBSS), the Irish Department of Education and Skills. The NBSS was established by the Department of Education and Skills in 2006 in response to the recommendation in ‘School Matters: The Report of the Task Force on Student Behaviour in Second Level Schools’ (Martin, 2006). This was in response to growing concerns expressed by teachers about the increasing challenges in delivering education with the changing skill-sets of the population of students, and the expectations of inclusive education for students with learning difficulties and complex needs.

“The mission is to promote and support positive behaviour for learning through the provision of a systematic continuum of support to post primary school communities, grounded in evidence-based practice. The NBSS is guided by the following key principles:

- Schools can make a difference in young people’s lives.
- A school-wide approach, founded on respectful relationships, is essential in promoting and supporting positive behaviours throughout the school community.
- Behaviour is intrinsically linked to teaching and learning.
- Inclusion is a core educational value.
- Good practice in schools is acknowledged and disseminated” (NBSS, 2018).
2.2.1 The NBSS Model of Support

The role of the NBSS is to assist partner schools in addressing current behavioural concerns on three levels. The NBSS works with schools in addressing students' social, emotional, academic, and wellbeing needs at Level 1: school-wide for all students, Level 2: targeted intervention for some students and Level 3: intensive individualised support for a few students.

![Model of Support](image.png)

**Figure 1. NBSS Model of Support**

The NBSS model of support draws extensively from Positive Behavioural Interventions and Supports (PBIS) (Sugai and Horner, 2002), Response to Intervention (RtI) (Fuchs and Fuchs, 2006) and the Comprehensive, Integrated, Three-Tiered Model of Prevention (CI3T) (Lane et al., 2009) frameworks.
Figure 2. Positive Behavioural Interventions and Supports - PBIS (Sugai & Horner, 2002),

Figure 3. Comprehensive, Integrated, Three-Tiered Model of Prevention (Lane et al., 2009).

The integration of these frameworks offers opportunities to address the behavioural, social, emotional, academic needs and positive health and well-being of students.
effectively with interventions at different levels of intensity and support (NBSS, 2015a). In NBSS partner schools this three-tiered approach is applied to behaviour interventions as well as interventions that address the social, emotional and academic literacy and learning needs of students. All three levels of support to NBSS partner schools are customised to the specific characteristics, needs and requirements of each partner school on an on-going basis as change occurs. Since 2009, occupational therapy contributes to all three levels of support as part of a collaboration between the Discipline of Occupational Therapy and the NBSS.

All work undertaken aims to promote positive behaviour and learning throughout the school by focusing on developing:

• Behaviour for Learning Skills
• Social and Emotional Literacy Skills
• Academic Literacy, Learning and Study Skills
• Positive Health and Wellbeing Skills.

This work is overseen by a team of Regional Development Officers who liaise with school management, coordinate the involvement of occupational therapists, speech and language therapists and psychologists, work with individual students and support the ‘Behaviour for Learning’ teachers.

In 2017, the NBSS amalgamated with the Special Education Support Service (SESS) and the Visiting Teachers for the Deaf/Blind to become the National Council for Special Education (NCSE) Support Service.

2.2.2 The NBSS Research Approach

As has been outlined above, the NBSS promotes and supports positive behaviour for learning through the provision of a systematic continuum of support to post primary school communities, grounded in evidence-based practice. As a state funded service, the NBSS must be seen to be using their finances responsibly by promoting in-school practice that has an ‘evidence base’. This has influenced the development of their model of support and the programmes and interventions they purchase from external service providers or develop ‘in house’. There is a pressure to prove that what they are spending their budget on ‘works’ by conducting research that adopts a positivist approach.
2.2.3 The Behaviour for Learning Programme

The Behaviour for Learning (BfL) Programme aims to explore ways in which an individual teacher can develop a school ‘Behaviour for Learning Programme’ specifically targeted at students in need of intensive individualised intervention (NBSS Level 3). Additionally, the Behaviour for Learning Programme teacher facilitates the planning, implementation and evaluation of effective responses to challenging behaviour at small group/class and/or year group level i.e. Level 2: targeted support for some students. The teacher works with identified students, individually or in groups on Behaviour for Learning programmes that are designed to meet their social and emotional, positive health and wellbeing, behavioural and academic needs, so they can achieve and succeed in school. An individual Student Behaviour Plan is developed for each student in receipt of Level 3 support. Rather than responding after young people present with chronic behaviours (‘a wait to fail’ intervention model), a school’s ‘Behaviour for Learning Programme’ also includes preventive strategies and early intervention approaches for all students i.e. NBSS Level 1 support (NBSS, 2015c). The NBSS fund 75 Behaviour for Learning Programme teachers nationally who support approximately 1000 ‘Level 3’ students to develop ‘behaviour for learning skills’. There are two occupational therapists employed to provide support to these teachers and students through teacher trainings, manualised interventions and school visits.

Schools apply to the Department of Education to be part of the Behaviour for Learning Programme with considerable demand nationwide for the support. If a school is successful in their application, an additional teaching post is awarded and schools generally interview internally for the post of ‘BfL’ teacher. The teachers appointed to these roles may have post graduate qualifications in special education needs but many would not and would be transferring from the mainstream classroom where they would have been teaching a range of curriculums from maths to physical educational to name only two. The BfL teachers receive intensive training and continuing professional development from the interdisciplinary national team of the NBSS which is comprised of experienced and specialist teachers, speech and language therapists and occupational therapists. The BfL teachers operate within a designated classroom in the school where they work with individual and groups of students. Due to the process in which schools apply for the support of the NBSS and individual teachers apply for the role of the Behaviour for Learning teacher, ‘buy in’ and motivation to engage with supports and interventions is generally good which is not always the case when introducing the perspective of other disciplines in schools. The NBSS also annually reviews the 75 schools receiving the
additional teacher post of a BfL teacher to ensure that the finite resource is being appropriately used in schools with the most need at that time.

2.2.4 The ‘DEIS’ Programme

The majority of schools in which the NBSS provide support and deliver interventions are designated as ‘DEIS’ schools (Delivering Equality of Opportunity in Schools) within the Irish education system. The DEIS programme is one of the more recent developments in Irish educational policy to support children and students in socially disadvantaged and rural communities with the goal of achieving better educational outcomes. In 2005, the Department of Education and Skills published ‘DEIS: Delivering Equality of Opportunity in Schools: An Action Plan for Educational Inclusion’. The plan brought together a number of schemes aimed at tackling educational disadvantage under a single framework, the DEIS School Support Programme (SSP). It was in response to the fact that “rates of educational underachievement and early school leaving remain much higher for pupils from disadvantaged communities than for other pupils” (DES, 2005, p. 8). Schools were identified for inclusion based on a range of ‘Poverty Indicators’, including the prevalence of unemployment, public housing and eligibility for the free book grant scheme (Smyth, 2017). The schemes that have been integrated into the School Support Programme are:

1. Home School Community Liaison Scheme (provision of co-ordinators who liaise with teachers and parents).
2. School Completion Programme (provides meals, homework clubs, and attendance trackers).
3. Support Teachers Project (a support teacher provides art/crafts activities)
4. Early Start Pre-School Scheme (provides grants and in-service training to preschool teachers).
5. Giving Children an Even Break (provides additional teachers and grants to schools in the DEIS scheme).
6. Breaking the Cycle (provides additional funding for materials/local initiatives)
7. Disadvantaged Area Scheme (provides supplementary funding for running costs, building grants etc.).
8. Literacy and Numeracy Schemes (Library Scheme, Maths Recovery, Reading Recovery, First Steps (training of teachers as tutors).
DEIS schools differ markedly from non-DEIS schools in terms of the social class background, parental education, household income and family structures of their students with a greater prevalence of students from Traveller backgrounds, non-English speaking students and students with special educational needs (Smyth et al, 2015). DEIS schools are not “special” schools but are different to non-DEIS schools as they can access additional funding for learning supports and have slightly smaller class sizes. The curriculum offered to students in DEIS schools is the same as in non-DEIS schools. Characteristics of these schools include lower rates of completion of junior and senior cycle than non-DEIS schools and more challenging disciplinary climates. Such negative interactions are associated with lower rates of school retention and progression to post-school education and training (Smyth et al., 2015). Students in DEIS schools experiencing ‘social, emotional and behavioural difficulties’ (SEBD) are described by the National Council for Special Education (NCSE) as children within an educational setting who present with disturbing and/or disruptive behaviour that interferes with social functioning and academic engagement (Cooper & Jacobs, 2011).

In 2017, a new DEIS Plan (DES, 2017) replaced the 2005 Action Plan and outlined a vision for future intervention in the critical area of social inclusion in education policy. It proposed:

2. A more effective system of resource allocation to ensure that resources are matched to identified educational need in schools.
3. Better interdepartmental and inter-agency working to achieve more effective delivery of services in and around schools.
4. A pilot approach to introducing measures which have been shown to work well in improving educational outcomes.
5. A Monitoring and Evaluation Framework to gather better information on school performance.

This new plan aims to “develop best practice in identification of schools needing support, pilot new approaches that can be mainstreamed over time, integrate the range of supports with other Departments and Agencies for optimal impact and aims to devise greater continuity of support across a wider range of schools over time” (DES, 2017, p.4).
2.2.5 Educational Disadvantage

The practice context of post primary schools in areas of social disadvantage has had a strong influence on the development of the NBSS occupational therapy programmes and in-school practice. Understanding educational disadvantage generally and then more specifically in the Irish context is an important aspect of this study as it will promote a deeper understanding of how the occupational therapy practice under study can support students with SEBD in the complex educational environments in which they attend.

There is a direct relationship between social class and educational outcomes as children from poorer backgrounds fare significantly worse than their more advantaged peers (Smyth & McCoy, 2006). Kellaghan et al. (1995) explain that “educational disadvantage found its roots in the wider context of socio-economic disadvantage and that within this context it is unlikely that the child can derive the full benefits from the education system if the family is just surviving” (p.30). The Demonstration Programme on Educational Disadvantage (1996-1999) offers the following comprehensive definition which reflects the complexity and stark realities of educational disadvantage for those who are caught in its ‘web’. It defines educational disadvantage as, “the complex interaction of factors at home, in school and in the community including economic, social, cultural and educational factors, which result in a young person deriving less benefit from formal education than their peers. As a result, they leave the formal education system with few or no qualifications, putting them at a disadvantage in the labour market, curtailing personal and social development, and leading to poverty and social exclusion” (p.2).

2.2.6 Identification of Special Educational Needs in the Context of Disadvantage

There is much discussion in the literature regarding the identification of special educational needs (SEN) across gender, social class and ethnic variables. However, less focus has been attributed to explaining the over and underrepresentation of students in certain categories of SEN. The data produced from the Growing up in Ireland studies has enabled this to be investigated with interesting results pertaining to the identification of students with SEBD in DEIS schools as reported by Banks, Shevlin and McCoy (2012) and McCoy, Banks and Shevlin (2012). Growing Up in Ireland is ‘The National Longitudinal Study of Children in Ireland’ extending over a seven-year period tracking the progress of two cohorts of children at two time points. The underlying framework of the Growing Up in Ireland study emphasises children’s connectedness to the world in which they live and draws on Bronfenbrenner’s perspective (Bronfenbrenner 1979; Bronfenbrenner & Morris
2006) which emphasises the importance of the multifaceted and multi-layered nature of the influences on development over the life course. This multi-informant model provides very rich information from a number of sources, including parents, teachers and the children themselves. The data drawn on in Banks et al. (2012) and McCoy et al. (2012) relates to primary age children (age 9) but still has relevance to the post primary context as children attending DEIS primary schools commonly progress to DEIS post primary schools within their neighbourhoods. Smyth and McCoy (2009) refer to an increasing ‘ghettoisation’ of those schools designated as disadvantaged with the vast majority (99 per cent) of post primary DEIS schools open to all who apply while 27 per cent of non-DEIS schools are oversubscribed and thus must limit entry. My practice experience in DEIS post primary schools is that students transitioning from primary frequently carry with them the labels and learning difficulties identified in primary school as well as family names that can often set them apart from their peers from day one.

It should be noted that SEN identification is considered obvious where students have ‘hard’ disabilities (blindness, orthopaedic impairment) versus ‘soft’ disabilities which include learning disabilities and emotional behaviour disorders where teacher interpretation plays a key role (Harry & Anderson 1994; Hibel, Farkas, & Morgan 2010). As schools aim to reproduce norms of learning and development informed by the adult interpretation of the ‘normally developing child’, students falling below these ‘norms’ can be defined as less-able. The literature reflects the tendency of particular student characteristics to be negatively constructed by schools, resulting in impoverished experiences and reduced opportunities leading to alienation and rejection from the educational establishment (Holt, 2004; Thomas & Loxely, 2001). Dyson and Gallannaugh (2008) suggest that “because the norm, arguably, is set in terms of those groups that schools find it easiest to deal with, it is no surprise that other groups - those from non-dominant cultures or whose behaviour challenges their teachers, for instance - are disproportionately likely to be identified as deviant and, specifically, as having special educational needs” (p.43). Indeed, it would appear that this suggestion is realised in the Irish data which is reported below.

The analysis of the data from the Growing Up in Ireland study showed evidence of a ‘frog-pond’ contextual effect in DEIS schools with an under-identification of learning disabilities and an over-identification of EBD in these schools McCoy et al (2012). The ‘frog pond effect’ refers to when the same student appears worse when compared to higher than to lower performing schoolmates. Previous research also indicates that the greater percentage of students with SEN in the class, the lower the likelihood of a student within that class being referred for special education (Hibel, Farkas, & Morgan 2010). The under-
identification of learning disabilities may reflect greater levels of need in disadvantaged contexts (which is not matched by comparable levels of support) with the result that only children with more severe learning disabilities are identified as having a SEN in such school contexts, with more diverse learning needs identified in other school contexts (McCoy et al., 2012). The authors also found that children attending DEIS Urban Band 1 schools are substantially more likely to be identified with an EBD than children attending other school contexts. Banks et al. (2012) went a step further in their analysis of this same data and investigated to what extent does the identification of EBD match with the student’s performance on an emotional and mental health measure (Piers-Harris Scale). They found that the child’s self-reported social emotional well-being, as measured by the Piers–Harris inventory, bears a very strong relationship to the probability of being identified with EBD. The results provide strong evidence for the value of the Piers-Harris scale as a measure of children’s well-being and as a significant indicator of emotional and behavioural difficulties. However, these findings signal over-identification among these groups, above and beyond children’s actual emotional–behavioural well-being suggesting that teachers are more likely to label a child from an unemployed and/or one-parent family as having EBD than a middle class child from a two-parent family with similar emotional–behavioural well-being (Banks et al., 2012). These findings point to a clear social context effect in EBD identification in Irish schools with children attending the socioeconomically most disadvantaged schools being more likely to be identified with EBD, even after taking account of their own social background characteristics and their emotional–behavioural profile.

There are some important implications to be considered from the findings outlined above in the context of this study and the cohort of students involved in the Movement Matters programme and other NBSS OT interventions. Firstly, there is evidence to suggest that children with learning disabilities attending non-DEIS schools have a greater chance of being identified and receiving timely support while children in disadvantaged DEIS schools risk being inappropriately labelled with emotional and behavioural disorders with potentially lifelong educational implications. Banks et al. (2012) refer to a tendency to label socially disadvantaged boys as ‘disturbed’ rather than ‘disruptive’ which results in an examination of within child/family issues rather than a focus on any inadequacies in the learning environment. Within a performance driven standards dominated educational system there is the real risk that boys from socially disadvantaged backgrounds can be excluded from classrooms and leave education early and be classified as ‘economically inactive’ (Riddell 2008). This risk of economic inactivity can be traced back to a student’s
experience in the education system where their needs were not met, potentially due to misidentification of their learning needs as described previously. This misidentification can lead to stereotypes and lowered expectations with implications for school engagement and motivation in the short term (McCoy & Banks, 2012). Indeed, it is well established that children attending disadvantaged schools achieving significantly lower reading and maths scores than children attending non-DEIS schools ((McCoy, Quail, & Smyth, 2014). Occupational therapy literature in the United States refers to the risk of students in high school experiencing occupational injustice as a result of a similar system of educational disadvantage, labelling and marginalisation (Marczuk, et al., 2014). The combination of over-identification of EBD, under identification of learning disabilities and consequently lower performance in literacy and numeracy can impact on school instructional and organisational policies resulting in lower student academic expectations (Thrupp, 2006). The consequence of this may mean that the most disadvantaged schools are opting for an environment of ‘care’ rather than ‘challenge’ (Darmanin 2003), with the role of the teacher straying more and more into the pastoral aspects of the student, perhaps at the cost of their educational progress. In addition to this, DEIS schools are more likely to use rigid ability grouping (streaming) than non-DEIS schools, and those allocated to lower-stream classes have been found to have worse academic outcomes than their peers (Smyth, 2016). Research from the UK indicates that students identified with EBD are more likely to be absent from school, display the most consistently negative attitudes towards school and do much less well academically (Keslair & McNally, 2009). This poorer academic performance is explained by McCoy et al. (2012) who conclude that an SEN label such as EBD may elicit lowered expectations from teachers and peers and when these lowered expectations are combined with reduced curricular coverage as well as the disability itself, the result is likely to be that the students learns the curriculum at a slower rate.

So what should schools be doing to promote the educational progress of all their student regardless of labels or SEN identification? Firstly, Banks et al. (2012) point to the recent development of the bio-psycho-social model of disability/SEN classification in the Irish system which offers a more comprehensive and sophisticated approach to this issue in comparison with the existing categorisation systems. “These models are based on the recognition that the interaction between the person and the environment is a critical factor in determining the ability of the person to access educational provision” (p.230). Simeonsson, Simeonsson, and Hollenwegger (2008) recommend that “the primary focus of classification of disability in special education should be the identification of the
characteristics that define the nature and extent of children’s performance limitations in meeting the physical, social and psychological tasks encountered in the school environment” (p.215). In terms of practice, Cooper and Jacobs (2011) recommend that schools develop and implement positive approaches to problem behaviour at the whole school and individual student level. Constructive school interventions focusing on developing a positive social/emotional climate to ensure that learning is conducive to these children with difficult behaviour could, in time, lessen the need to categorise these children as EBD which carries with it a host of potential dangers for the individual and the school (Banks et al. 2012). However, previous research has found that teachers can revert to the opposite of constructivist principles with SEN students, with more teacher-directed instruction and less student-led exploration, little cooperative and peer-supported learning and rote drills rather than higher levels of cognitive engagement (Knapp & Associates, 1995).

The literature presented above paints a troubling picture for the students attending the post primary schools involved in this study. They are disadvantaged by the socioeconomic environment that they have been born into and by the institutional systems of the state which places them at serious risk of occupational injustice through educational exclusion and economic inactivity with potential lifelong implications. However, as will be outlined below, the DEIS programme has been found to be improving outcomes for students but has far from eliminated the injustice of educational disadvantage. The Behaviour for Learning Programme of the NBSS including the occupational therapy interventions described in this study is part of the Irish Government’s intention to implement best practice in schools with a high number of students with SEBD.

2.2.7 Evaluation of the DEIS Programme

A number of evaluations have been conducted on the impact of the DEIS programme in Irish primary and post primary schools since its introduction (DES, 2009, 2011a, 2011b). These studies have largely focused on student academic achievement in primary school with significant improvement noted over time (2007-2013) in the literacy and numeracy scores for students in DEIS urban primary schools. However, this improvement may be due to the national literacy and numeracy strategy implemented in all schools with the gap in performance between DEIS and non-DEIS remaining largely unchanged (Shiel et al., 2014). The difference between rural and urban DEIS is worth noting with those in rural DEIS schools faring significantly better than their peers in urban DEIS schools (Shiel et al., 2014). This pattern may reflect how cultural resources (such as reading behaviour and
parental expectations) in rural households appear to compensate for low levels of income (Weir & McAvinue, 2013). Increases in test scores have been greater among lower achieving students, most likely because of the targeted nature of literacy and numeracy initiatives. While we know that academic performance is only one aspect of the difficulties faced by students with emotional and behaviour disorders, improved competence in the learning activities of primary school should better equip them in the transition to post primary with a better sense of self efficacy from a learning perspective. In terms of post primary, the progress uncovered relates to a slight but significant narrowing of the gap in average Junior Certificate grades and some improvement in relation to attendance in the most years under study (2014/15). While post primary DEIS schools continue to have much lower rates of retention than non-DEIS, it is positive to report that the gap in retention rates has narrowed significantly over time, from 22 per cent at upper secondary level for the 1995 school entrant cohort to 10.7 per cent for 2009.

Smyth (2017) summarises what we know about the DEIS programme so far in highlighting some improvements in attendance levels in urban schools, and in retention rates and overall Junior Cert grades at secondary level. “Literacy and numeracy levels have improved in DEIS primary schools, although the gap in achievement between DEIS and non-DEIS schools has not narrowed over time. The DEIS programme has involved the provision of additional funding and multifaceted supports to schools serving disadvantaged populations, which means it is not possible to disentangle which elements of the programme work best (Smyth et al., 2015). It is likely that any changes in student outcomes reflect the comprehensive nature of supports, including the provision of additional resources, a focus on planning for teaching and learning, and schools offering socio-emotional as well as practical support (e.g. school meals) for students and their families” (p.177).

2.2.8 Access to Health Service Support

Another factor influencing the development of the NBSS in-school occupational therapy practice for students with SEBD was the gap in service provision available through the state run health service - Health Service Executive (HSE). Ireland signed up to the UN Convention on the Rights of the Child (United Nations, 1989) in 1992 and published the Education for Persons with Special Educational Needs (EPSEN) Act in 2004 (Government of Ireland, 2004) and the Disability Act in 2005 (Government of Ireland, 2005) which committed to providing ‘Assessments of Need’ to people with disabilities and/or special educational needs, including emotional and behavioural difficulties, through the HSE
therapy services. However, until recently, this assessment of need was only open to children up to the age of five. While the HSE ‘Primary Care’ teams and the Child and Adolescents Mental Health Service (CAMHS) teams can receive a referral for students in post primary school with SEBD, there is a gap in knowledge within the occupational therapy literature to guide practice in this area but more importantly, the support provided by these teams is clinic based as opposed to school based where support can be tailored to the individual in their unique learning environment. This school based model of therapy support is now widely recognised as the most effective way of affecting positive child outcomes (Cahill, 2010; Chu, 2017; Hutton, 2009; Missiuna et al., 2012).

2.2.9 Recent developments in Irish Educational Policy

In March 2018, the National Council for Special Education (NCSE) published a significant policy advice paper entitled, ‘Comprehensive Review of the Special Needs Assistant Scheme: A New School Inclusion Model to Deliver the Right Supports at the Right Time to Students with Additional Care Needs’ (NCSE, 2018). They define care needs as “needs that can reasonably be expected to be met, with appropriate planning and preparation, by the teaching staff and, as necessary, through teachers upskilling their knowledge and practice; curricular differentiation; the use of assistive technology/specialist equipment; the adaptation of the learning environment; and the advice and support provided by NEPS, the NCSE, the HSE, and other support services. ‘Care needs’ is used in its broadest sense to include students who may require therapy supports, ISL support, Braille support and so on. It should not be taken to refer only to those who require personal or nursing care” (p.vii). The NCSE recommends a shift away from a diagnosis centred model to a needs based model of support provision where students with the greatest level of need get the support they require when they need it. Schools will be given the freedom to allocate resources the students under the three tiered continuum of support framework. The NCSE in this policy advice paper also reinstates their vision of an inclusive educational experience and the educational outcomes envisaged for all students including those with special educational needs. They use the definition from Winter and O’Raw (2010) which proposes that “inclusion is a process of addressing and responding to the diversity of needs of learners through enabling participation in learning, cultures and communities; and removing barriers within and from education through the accommodation and provision of appropriate structures and arrangements to enable each learner to achieve the maximum benefit from his/her attendance at school” (p.39). The NCSE also outline the educational outcomes they envisage for students with special educational needs including;
• Academic achievement-related outcomes (such as literary, numeracy, examination results);
• Attendance-related outcomes (such as school attendance, early school leaving);
• Happiness-related outcomes (such as wellbeing, confidence, positive relationships, self-esteem, attitude to school and learning, engagement in extracurricular activities, quality of life indicators);
• Independence-related outcomes (such as resilience, socialisation, mobility, use of assistive technology, life skills);
• End of school outcomes (NCSE, 2014).

Most significantly for the context of this study, the NCSE recommended the development of ‘ten fully staffed regional support teams to build school and teacher capacity through continuing professional development (CPD) and in-school support. The NCSE teams should comprise specialist teachers; SENOs; speech and language therapists (SLTs); occupational therapists (OTs); and behaviour practitioners. These teams will work in collaboration with NEPS, HSE and other services to deliver the right supports to schools, students and parents’ (NCSE, 2018, p.6). The NCSE recommend that funding be ring-fenced for the development of an in-school therapy service, the nature and composition of which should be determined following evaluation of the in-school therapy demonstration project which is planned to be introduced in the 2018/2019 school year.

It is relevant to note that the adoption of the multi-tiered model of support by the NBSS during its inception in 2006 as an in-school support service as well as its partnership with a university to introduce occupational therapy into mainstream post primary schools was an innovative development, not evident in the literature in this area at the time. With that in mind, the following section will focus on that partnership between the Discipline of Occupational Therapy in Trinity College Dublin and the National Behaviour Support Service of the Department of Education and Skills.
2.3 The University and NBSS Partnership

The focus of this study is on the development of practice in an area with little evidence in the international literature. Manley, McCormack & Wilson, (2008) describe practice development as a continuous process affecting the culture of practitioners that fosters learning and brings about transformation of individual and team practices. It is enabled by facilitators who authentically engage with individuals and teams to blend personal qualities and creative imagination with practice skills and practice wisdom. This is sustained by embedding both processes and outcomes in the strategic plan for the service or work place. Therefore, it is important in this study on practice development to give some description of the contribution by the academic department of occupational therapy.

Occupational therapy theory provides a rationale for practice based work for any setting, but it is important that when working collaboratively with other professionals that this rationale makes sense by the others in the practice context. MacCobb (2012) contributed a chapter in the book “Transforming Troubled Lives”, edited by the UK leaders in this area (Visser, Daniels & Cole, 2012), aimed at all professionals working in schools with this student population. This offered an application of the core values of occupational therapy applied in school settings in areas of social disadvantage, thus articulating these to others such as teachers and school based psychologists. It also provided an example of professional reasoning relevant for the new occupational therapy graduates who joined the service. The author of this work is the researcher’s main research supervisor who came to be the coordinator of the NBSS occupational therapy service. Further publications by the NBSS occupational therapy team in occupational therapy literature and on the national service’s website helped clarify thinking and articulation of occupational therapy to an Irish and international readership from both professions. These publications form part of the documentation reviewed as part of this study, and are contained in the appendix.

“Movement Matters” is one of several programmes developed through the innovative partnership between the academic department in the university and the NBSS. The depth and breadth of the then 4 year BSc. course in Occupational Therapy (2010) and the presence of an academic champion with a broad range of academic and service development experience facilitated the building of this collaborative practice. The ‘academic champion’ referred to here came to be the coordinator of the NBSS occupational therapy service and also the research supervisor of this thesis. Graduates who were confident and comfortable in taking on the challenge and who were known to the academic champion, were hand picked initially for the work, and between them forged
links between theory and practice in partnership with the NBSS leadership and teachers in the classrooms. The researcher is one of those ‘hand picked’ graduates that was known to the academic champion through his participation in ‘peer education’ and ‘study of occupation’ projects in special schools and disadvantaged post primary schools during his undergraduate studies. The role of undergraduate education is highlighted here, as a factor in capacity building for developing practice as a novice graduate. Some further description is reported below, taken from the BSc Curriculum (2010). The educational philosophy of the course is presented in order to highlight that students were educated within the theories and values of the profession. At that time there was considerable amount of experiential learning and small group work. Students were supported to become confident in managing discomfort as they developed personally and professionally through the variety of learning methods and assessment requirements. Dewey’s (1933) influence can be see throughout.

2.3.1 Educational Philosophy of the BSc. in Occupational Therapy (2010)

The four-year curriculum focused on the development of the competent practice of occupational therapy in a variety of contexts, and in a changing service delivery arena. “Equal value is placed on the knowledge, skills and attitudes required to develop competent, reflective occupational therapy service providers. The student is viewed as an active learner. Teaching emphasizes the process of learning as well as the acquisition of knowledge. The educators endeavor to facilitate this process and perceive themselves as resources for self-directed learners more than as transmitters or controllers of instruction. A variety of teaching and learning strategies are used to foster this approach, such as: peer education; problem based learning; small group teaching (including learning through discussion) and experiential learning, as well as the traditional methods such as lecture formats. Collective learning is also a central focus of the educational philosophy. Collaboration is supported as a method of promoting deeper learning’ (BSc. Occupational Therapy Curriculum, 2010).

Reflection is central to developing evaluative, ethical practice and is essential for life-long learning. Reflection, according to Kolb (1984) is the process of having an experience and then reflecting on observations or actions and reviewing the situation. Inherent in this method of learning is the expectation that a person will approach the same situation in future with alternative ideas. Students were facilitated in and expected to develop skills of reflection and to use tools such as journals, group discussion and reflective reports to learn from their experiences and promote personal and professional development.
Throughout the four years, students develop an understanding of and experience the interaction between occupation, the person and the environment. They also examine the relationship between occupation, health and well-being. Students develop knowledge about occupational science, experience a variety of occupational forms and learn to apply these concepts in practice. They are also encouraged to deepen their appreciation of themselves as occupational beings (BSc. Occupational Therapy Curriculum, 2010). Some of the unique teaching/learning methods from the Trinity Occupational Therapy Curriculum relevant to the development of emerging practice are presented below.

2.3.1.1  Experiential Learning

Experiential learning, or learning by doing, has been an integral part of the occupational therapy process since its conception. John Dewey engaged students in tasks of a collaborative nature. He recognised that it was through active occupation, purposeful activity, and creative, adaptive problem solving that human beings reduced their uncertainty and mastered the skills they needed to develop as individuals and as societies (Dewey, 1933, Breines, 1995). This course engages the students in active experiential learning from first year through to 4th year. A feature of the course during 2010 was that students were participants in an inclusive educational model which allowed for values and attitudes to be examined and addressed in an experiential way. Students learned side by side with others including adult students from the National Institute for Intellectual Disability, and through a Service Learning programme throughout the first two years.

2.3.1.2  Service Learning

Service Learning involved students and staff, community organizations and individuals cooperating in a reciprocal partnership to address a need and or enrich occupational engagement opportunities for the individual, groups or community while facilitating the academic, civic and personal development of the student.

“Service learning connects student experience in this collaboration with learning from existing knowledge and course work. In following the “Principles of Good Practice for Combining Service and Learning” (Honnet & Poulsen, 1989), our curriculum provides structured opportunities for students to critically reflect on their service experience, in the context of clear learning goals integrated with theory based coursework. Service learning is at the core of the Study of Occupation and Disability Studies modules and All Freshman students are required to participate” (BSc. Occupational Therapy Curriculum, 2010, p.5).
Some of the Junior Sophister (JS) students participate in service learning as part of the Peer Education and Group Skills module. Examples included collaborative working in advocacy with people with intellectual disabilities, delivery of sensory-motor play opportunities in a school for children with autism, personal development with female prisoners, ‘being a buddy’ with socially disadvantaged people with enduring mental health difficulties, and researching the needs of a voluntary organisations members.

2.3.1.3 Peer Education

“The method of peer education employed in this course is defined as 'instruction by or guidance from equals'. Peer education as a method has grown from self-directed students responding to campus health issues, to health models designed to empower students to promote healthy lifestyles and positive health behaviours (Gould & Lomas, 1993). Relationships among healthcare professionals and their client groups are changing from passive interventions and behaviours to active interventions and behaviours (Sloane & Zimmer 1993). In this changing climate people seeking health care want to be partners participating in their own health and lifestyle decisions. There is a significant 3rd year module on peer education in which the student applies theories of group work to small peer group learning endeavours” (BSc. Occupational Therapy Curriculum, 2010, p.7).

2.3.1.4 Learning Through Discussion

William Fawcett Hill’s method of ‘Learning through discussion’ facilitates a high level of analytical thinking along with the opportunity to evaluate one's own intellectual and interpersonal abilities. Students learn not only the subject matter but they also gain competency in critical thinking skills. The learning through group discussion method is based on the use of ‘democratic dynamics’ in contrast to groups modelled on the authoritarian style or the laissez-faire mode (Rabow, Charness, Kipperman & Radcliffe-Vasile, 1994).

2.3.2 The Academic Partnership Champion

The partnership would not have developed without a champion in both services. The academic champion and coordinator of the NBSS occupational therapy service had many years working collaboratively with groups of disabled people, service providers including special schools, disability organizations and mental health services. She also developed extensive Study of Occupation modules across all four years of the course, introduced a
Disabilities Studies modules in the early 2000’s; the Service Learning modules in 1995 in each of the Freshman years, and was a partner with another academic in the JS Peer Education Group work modules involving self-advocacy and peer group advocacy by people with intellectual disabilities funded by the Citizens Information Board. She was invited by the National Co-ordinator of the NBSS to give advice on broadening approaches to managing student behaviour for those with complex needs. Subsequent to this, the partnership developed with increasing year on year funding initially for specific targeted interventions and developed to involvement in all of the tiers in the three tiered model of support, within an appreciation of whole school supports as an essential component.

2.3.3 Influence of the NBSS partnership: Curriculum Development and Research in the Academic Department.

As part of the process of theory influencing emerging practice, that practice itself has influenced teaching content and approach. As a result of the engagement in the collaborative work, a specific focus on social disadvantage and participation in school is offered in the Study of Occupation, and Disability Studies modules. The Occupational Science literature (Townsend, 1993, Wilcock, 2006) explaining the determinants of health and wellbeing, concepts of occupational justice, occupational deprivation and alienation and most recently the application of the Participatory Occupational Justice Framework (Whiteford and Townsend, 2011) have now been applied in the teaching the final two years of the Study of Occupation modules. Thus the feed-in from the undergraduate programme to the development of practice by recent graduates and the feed-back into the programme by their work is facilitated by both the academic member of staff and the NBSS occupational therapists who also lecture on these modules.

Student contact has sparked research interests by undergraduate and postgraduate students in this emerging area. The work-base is housed within the academic department, thus facilitating practitioner and academic staff interactions and on-going mentoring. Work practices and support from the NBSS ensure occupational therapists, clinical speech and language therapists and educators discuss and plan collaborative approaches to service developments. Yearly specific targets are set related to funding, and on-going monitoring is maintained, with frequent review and troubleshooting. There is a policy of and expectation for ongoing Continuous Professional Development supported by the academic department and by the NBSS.
As these are the only two occupational therapists funded by the Department of Education and Science, all others are funded through the Department of Health. Now established, jobs are offered through an open applications process. Specific job descriptions have been designed related to the unique work requirements.

“The occupational therapy team adapts and translates concepts, techniques and approaches from its own discipline into evidence informed practice in the school setting. Central to the work of the occupational therapist is the development and delivery of teacher education, conducting environmental audits and developing and delivering group approaches for working with students with complex needs in schools across throughout country. A solid understanding of sensory integration and child and adolescent development is required as well as a disabilities studies perspective and rights based approach to inclusive education. An ongoing research approach is applied in all aspects of the work” (Senior Occupational Therapist Job Description, 2017).

This study on practice development is perceived to be an important part of the work of the occupational therapy team. It is being supported by the practice development culture in the partnership approach between the NBSS and the academic discipline, with the expectation that knowledge should be generated, not just about programme development, but also if and how the learning needs of students with the most complex needs (Level 3) can be supported by involving occupational therapists in curriculum design and in their classroom.

2.4 Chapter Summary

This chapter has described the practice context in which the study is based. This is important in the context of the study as it is about establishing and developing practice in an emerging area that has not been well described in the occupational therapy literature to date. It also described the academic-practice partnership between the NBSS and Trinity College Dublin where the flow of occupational therapy theory has influenced the practice of teachers working with complex students and the practice context of the NBSS has consequently influenced aspects of the undergraduate occupational therapy curriculum.

The Literature Review Chapter that follows provides further insight into the practice context by reviewing a range of literature relevant to the setting.
3 Chapter 3: Literature Review

3.1 Introduction

The Literature Review builds on the description of the context of the study in Chapter 1. Due to the uniqueness of the Movement Matters Programme and the practice context, the Literature Review adopts a narrative style (Green et al., 2006) and examines some of the most pertinent subject areas relating to the practice setting, the programme and the individuals involved in the study. Narrative reviews are recognised as helpful in presenting a broad perspective on a topic and often describes the history or development of a problem or its management (Day, 1998, Slavin, 1995). This style is acknowledged as an effective method for presenting philosophical perspectives in a balanced manner (Green et al., 2006).

The Literature Review is structured to inform the study aim and reflect the study objectives. These objectives intend to inform the overall study aim of understanding the process of developing practice in an emerging context for occupational therapy by focusing on a recently developed programme, ‘Movement Matters’.

Part One of the review reflects the positivistic quest for knowledge, certainty and solutions to the problems encountered by students with social, emotional and behavioural difficulties (SEBD). It opens with an examination of some of the socioeconomic factors that impact on a child’s cognition and behaviour and the development of SEBD. The sensory integration theory that informed the development of the Movement Matters Programme is then described with reference to its evidence base. Occupational therapy practice in schools and with students with SEBD is outlined followed by reference to components that make up student well-being.

Part Two reflects the post positivistic philosophy which is rooted in a more holistic perspective and states that an absolute reality can never be understood but rather only approximated (Denzin and Lincoln, 2000). This is consistent with occupational therapy’s philosophy of client uniqueness and holistic approach to problem solving. Central to this problem solving and theory development process is clinical reasoning. An in-depth review of clinical reasoning literature in occupational therapy is therefore outlined before the debate regarding knowledge generation, the nature of knowledge and ways of knowing in the health and social sciences is discussed.
3.2 Part One

3.3 Social, Emotional and Behavioural Difficulties

The Movement Matters Programme was specifically designed as a Level 3 intervention targeting the 5% of students requiring intensive, specialised, individual interventions as outlined in the PBIS (Sugai and Horner, 2002) and CI3T (Lane et al., 2009) frameworks. These students could be described has having 'social, emotional and behavioural difficulties' (SEBD).

3.3.1 Definition

The identification of an internationally accepted definition of social emotional and behavioural difficulties is somewhat difficult and very much reflected in the literature. The Routledge International Companion to Emotional and Behavioural Difficulties have adopted the term ‘Emotional and Behaviour Disorder’ (EBD) as the editors explain that the letters (EBD) have wide international currency and is preferred to longer versions of the term (SEBD, BESD) as these tend to refer to more complex aetiology of the pupils being referred to (Cole et al., 2013).

The term EBD evolved in Britain, Europe and the USA partly in opposition to the medicalization of problems that educators were not trained to diagnose or treat but were expected to manage in the classroom according to Bilton and Cooper (2013). EBD is a widely used term in the USA nowadays among medical/psychiatric professionals as well as in educational legislation and psychological and educational research according to (Cooper and Jacobs, 2011). Cole et al (2013) on the other hand refers to 'non educationalists' who would still not associate much meaning to the term EBD, and prefer to instead opt for medical abbreviations such as conduct disorder (CD), oppositional defiant disorder (ODD) and attention deficit/hyperactivity disorder (ADHD). This labelling and categorisation of student is preferred in some cases as it places blame in a medical condition for which no one can be held responsible (Riddell and McCluskey, 2013).

A significant shift from a medical to a social model for responding to special educators needs occurred in the UK at the turn of the century (Ofsted, 1999), placing the problem not within the child but within the social and environmental constructs that were failing to support them, e.g. families, schools, institutions, society. In Scotland and more recently England, ‘social’ was incorporated into the EBD formulation, completing the contextualisation process (Bilton and Cooper, 2013).
In an international review conducted by the National Council for Special Education, the authors of the report also address the wide range of terminology used in this area including social, emotional and behavioural difficulties [SEBD] (Scotland), behavioural, emotional and social difficulties [BESD] (England) or emotional and behavioural difficulties [EBD] (Northern Ireland & USA) (Cooper and Jacobs, 2011). The authors explain that these ‘variations of an educational concept currently used in the UK and Northern Ireland refer to disturbances to social, emotional and/or behavioural functioning that have a direct and significant impact on the educational engagement and progress of school students.’ The presence of the word ‘social’ in the Scottish interpretation of the term is significant according to the report as it refers to the student within their social context and acknowledges that the ‘problem may reside in the environment rather than the individual.’ This way of thinking replaces an outdated term, ‘maladjustment’ which referred to people who were poorly adjusted to their environments and compliments the reference made to the development of the social model within special educational needs by Bilton and Cooper (2013).

From an Irish perspective, the National Council for Special Education (NCSE) (Cooper and Jacobs, 2011) adopted the following definition of ‘children with emotional disturbance/behavioural difficulties and severe emotional disturbance/behavioural difficulties’ as a group of children within an educational setting who present with disturbing and/or disruptive behaviour that interferes with social functioning and academic engagement.

The English government in comparison refer to EBD is a learning difficulty where children and young people demonstrate features of emotional and behavioural difficulties such as: being withdrawn or isolated, disruptive and disturbing; being hyperactive and lacking concentration; having immature social skills; or presenting challenging behaviours arising from other complex special needs (Department for Children, 2008). Other authors have expressed their concerns regarding the subjectivity of certain definitions and lack of clarity surrounding the area of SEBD. Fovet (2011) refers to studies which found that students with emotional and behavioural difficulties differ from other students only in the frequency, intensity, and duration of their behaviours (Jones et al., 2004). Subjectivity and context therefore remain key issues despite all endeavours to attain objective assessment (Fovet, 2011).

As can be seen from the literature documented above, the subject of emotional and behavioural disorders is complex and somewhat controversial. However, improving
understanding of terms such as EBD is needed rather than a futile search for enduring new euphemisms according to Kauffman (2013).

3.3.2 Prevalence

The question of prevalence or how many school age children have an emotional or behavioural disorder (EBD) is a critical problem in the provision of services to this population of children, especially in special education (Forness et al., 2012). A review of the literature pertaining to this area paints a picture of uncertainty and further discussion regarding definitions and measures of EBD. Forness et al (2012) conducted a systematic literature review of child and adolescent prevalence studies of EBD. Their goal was to update the point and cumulative prevalence data for this cohort. They found an average point prevalence rate of 15.8% across 52 studies up to 1995 while a more recent batch of studies (1995-2010) produced a mean prevalence rate of 12.7%.

These figures are generally comparable to studies by Roberts et al. (1998) and Costello et al. (2005) that analysed prevalence studies of students and predicted that 12% of students would present with 'moderate' EBD (Roberts et al., 1998) (Costello et al., 2005). Cumulative prevalence takes into account individuals who meet the criteria for an EBD at any time over the course of their lives. Forness et al. (2012) found consistent rates of prevalence across four, criteria specific studies with differing samples of between 37%-39%. The authors conclude that the best estimate of point prevalence was 12% of school age children or youth have an EBD of moderate impairment whilst the cumulative prevalence rates suggest that at least a third of all school children or youth will have an EBD at some point prior to graduation.

This cumulative point prevalence figure of approximately 33% is reflected in the Scottish education system where SEBD accounts for about one-third of all children identified as having additional support needs (Riddell and McCluskey, 2013). According to the official 2009/10 government statistics in Germany, only 0.66% of the school age population were categorised as having special needs in the area of EBD (Destatis, 2010). Willmann (2013) attributes this significantly lower figure when compared internationally to a high rate of under identification, overlap of EBD with other special needs and faulty diagnosis. This high discrepancy has also been reported in other education systems according to the author (Willmann, 2013).

Finally, recent statistics from the Irish education system report that students with EBD/severe EBD account for 15.6% of total students with additional teaching hours and
29.2% of students who receive support from Special Needs Assistants (SNA) present with EBD/severe EBD (National Council for Special Education, 2011).

There is undoubtedly a gender bias to be observed in the prevalence statistics with an over-representation of boys with regard to SEBD considered a global phenomenon (OECD, 2007b). While boys have a reputation for acting out with verbal assaults and physical confrontation, girls tend to show more internalising behaviours such as depression, anxiety and eating disorders (Riddell and McCluskey, 2013). Willmann (2013) suggests that the dominating perception of challenging behaviours of children and youth produces the gender bias; we seem to deal with 'bad boys and sick girls' (p.77).

3.3.3 Teacher Perspectives on Social Emotional and Behavioural Difficulties

Shevlin et al. (2008) indicate that students with SEBD pose significant challenges to schools and teachers. Their intense educational needs often combined with antisocial elements make them one of the most challenging SEN groups to support in mainstream education. It is important that teachers feel equipped to support this cohort of students as there is an increasing likelihood of encountering challenges associated with SEBD in classrooms (Farley et al., 2012, Shillingford and Karlin, 2014). However, the literature indicates that supporting these challenges in the classroom can be stressful for both experienced and newly qualified teachers alike, and demand excessive quantity of their teaching time (Gray et al., 1996, Atici, 2007).

These challenges supporting students with SEBD may be linked to teachers’ understanding of behaviour and emotional development. Orsati and Causton-Theoharis (2013) found that a discourse of control shapes how teachers understand and support students in the classroom. Behaviours can be viewed as located individually and attributed to deficit backgrounds and lack of internal control of the child. These behaviours that challenge can be considered a threat to the social order of the school where the teacher is the dominant figure. Schools may adopt a passive attitude to challenging behaviour and rely on punishment, and exclusion which creates academic exclusion that can lead to more behavioural issues (Kerr and Nelson, 2009).

3.3.4 Factors Influencing Teacher Perspectives on SEBD

There are a number of teacher-related variables that may influence the findings of the literature above and contribute to the perspectives described. Scanlon and Barnes-Holmes (2013) identified two key factors that could obstruct effective inclusion of pupils with SEBD
in mainstream education. Firstly, negative attitudes towards students with SEBD may intensify feelings of professional inadequacy and negatively influence teacher-student interactions. This cohort of students poses the greatest threat to teachers’ self-efficacy which is identified as the one of the few individual characteristics that reliably predict teacher practice and student outcomes (OECD, 2009, Shillingford and Karlin, 2014, Woolfolk and Hoy, 1990). The second key factor that influences the inclusion of students with SEBD in mainstream education is the lack of specific training and support for teachers. They conclude that despite their considerable motivation and educational competence, teachers lack critical skills for managing challenging behaviour (Scanlon and Barnes-Holmes, 2013).

The result of these factors in practice can present in teachers’ interactions with students with SEBD. Consistent negative reactions from teachers to challenging behaviour can increase students’ non-productive behaviours resulting in student teacher relationship breakdown and potentially students’ detachment from school (Shillingford and Karlin, 2014, Cooper, 2006). To support students with SEBD to stay engaged and be successful in learning, teachers must have knowledge about SEBD and understand how to implement effective approaches to help these students (Poulou, 2005). Recent developments in the Irish education system have identified all teachers as responsible for the support of students with special educational needs including SEBD (National Council for Special Education, 2014).

3.3.5 Shared Perspectives on SEBD

There are similarities to be noted between the teaching and occupational therapy professions as regards support approaches for this cohort of students. Both Orsati and Causton-Theoharis (2013) and McCready and Soloway (2010) conclude that the development of trusting relationships between the teacher and student with challenging behaviour is the foundation of effective interventions. Mihalas et al. (2009) examined how individual teachers can positively affect outcomes of students with EBD through relationship building. Relationships, care and respect were identified as important factors by students. Special education teachers in particular are in a unique position according to the authors, to develop positive relationships and facilitate students’ development of social identity, regulation of emotions and sense of belongingness. The authors also refer to the importance of the teacher-student relationship in terms of motivation for learning and that early positive relationship building can be a preventative factor for behavioural difficulties. This philosophy on meaningful relationships is central to client centred occupational
therapy practice (Law and Mills, 1998, Matheson, 1998) and outlined as key for occupational therapists working in mainstream post primary schools with students with SEBD by (MacCobb, 2012). Post primary schools were identified as particularly challenging for student-teacher relationships with environments that can discourage interpersonal relationships and diminish social emotional support (Mihalas et al., 2009).
3.4 Socio-Economic Factors

The link between social deprivation and SEBD is well established. The literature points to a pattern of problematic behaviour and low academic achievement in areas of social disadvantage. Duncan et al. (1994) found that low income and poverty were good predictors of cognitive development and behavioural measures. Other research refers to the importance of the early childhood years for learning self-regulation skills such as regulating attention (Holzer et al., 2007, Duncan et al., 2007). Bolger et al. (1995) established the link between long term exposure to poverty and behavioural problems at school.

In the case of Scotland, a review of the country’s education system by the Organisation for Economic Co-operation and Development (OECD) found that while there is high level of educational attainment and equitable levels of resource distribution, there continues to be a gap between pupil attainment in relation to socio-economic status (OECD, 2007a). Boys in particular from poorer homes were identified in the report as being more likely to exhibit behavioural difficulties in post primary schools and are over represented in groups of low attainers and early school leavers. The OECD report lays the blame for this achievement gap on the focus of the system on a highly academic curriculum which is taught in a way that makes it inaccessible to many students from socially and culturally deprived backgrounds. It is this mismatch between pupil interests and curricular demands that leads to the emergence of behavioural difficulties and poor discipline according to the authors of the report. The statistics in Scotland show that children from the most deprived areas are more than twice as likely to have additional support needs identified than those living in the least deprived areas (Scottish Government, 2009).

The topic of socio-economic status, poverty and deprivation is a particularly relevant one in the context of the Irish setting. Ireland experienced one of the most severe economic downturns of the OECD countries as a result of the economic crisis that began in 2008. GDP growth fell from 5% in 2007 to 0.2% in 2012, while the level of unemployment increased from 4% in the mid-2000s to a high of 15% in 2012 (Watson et al., 2014). The authors tracked the economic vulnerability of families from the boom through the recession and found that persistent economic vulnerability had a stronger impact on socio-emotional well-being than transient economic vulnerability. Other recent research in the Irish setting has established the co-existing association between childhood poverty and outcomes including achievement in numeracy and literacy, social adjustment, behavioural problems and health (Williams and Whelan, 2011).
Not all authors agree that socioeconomic background alone is the greatest indicator of later cognitive and behavioural development. Gerhardt (2013) suggests that it has much more to do with the parent’s own emotional regulation based in their own early attachment relationships. The following sections will look at the impact of attachment on later development with particular focus on environments that do not promote healthy attachment relationships.

3.4.1 Attachment

Attachment is defined as a close, reciprocal, emotional relationship between two persons, characterised by mutual affection and a desire to maintain proximity (Bowlby, 1969). It describes an emotional bond that serves to promote and preserve closeness between a young child and a small number of adult caregivers who are responsible for comforting, supporting, nurturing and protecting the child (Breidenstine et al., 2011).

The relevance of attachment theory to the subject of SEBD in adolescents is clearly documented in the literature with numerous studies demonstrating that abnormal attachments predict both internalising and externalising problems concurrently and in later childhood and adolescence (Green and Goldwyn, 2002, Lyons-Ruth and Jacobvitz, 2008, Zeanah et al., 2003).

There are a number of brain structures and biochemical pathways that are central to healthy attachment relationships between baby and appropriate adults. One of the earliest neurological systems to develop is the stress response system. The hypothalamic-pituitary-adrenal (HPA) axis is activated in response to threat/stress, secreting the stress hormone cortisol along with serotonin, oxytocin and dopamine creating a biochemical pathway within the prefrontal cortex (Gerhardt, 2004). Serotonin and oxytocin are released when an infant is soothed and feels protected following exposure to a stressful environment which acts to disperse cortisol that was released during the stressful incident that elicited the behavioural reaction to seek comfort (Gerhardt, 2004). The author also refers to the process by which the brain releases glucose and brain derived neurotrophic growth factor that supports the growth of neural connections in the social brain areas when a baby feels safe and positively aroused.

The interaction between the medial prefrontal cortex and amygdala in the first 18 months of life are crucial for the child’s social and emotional development. Gerhardt (2013) describes how the medial prefrontal cortex serves to inhibit the emotionally impulsive amygdala through the appropriate delivery of calming hormones through pathways
following comfort from a caring adult. This process is particularly important in early development as the child’s prefrontal cortex is not yet developed and the child cannot reflect or have context to draw on when he/she is negatively aroused. With a caring, sensitive adult to provide comfort and model self-control, the child will gradually master his/her impulses and as he/she does so, the repetition of those experiences lays down a pathway between the pre-frontal cortex and the amygdala, enabling the ‘higher’ brain to inhibit the more instant, impulsive reactions of the ‘lower’ (Gerhardt, 2004).

Mary Ainsworth and colleagues developed the ‘Strange Situation Procedure’ that is regarded as the most widely used technique for measuring the quality of attachments of 1-2 years-olds with their parents/caregivers (Ainsworth et al., 1978). Following the test, infants can be characterised as having a secure attachment, resistant attachment, avoidant attachment or a disorganised/disoriented attachment. The majority, (65%) of 1 year-olds will develop secure attachments with their care givers involving the neurological and biochemical processes documented previously/above (Shaffer and Kipp, 2010). However, traumatic experiences at an early age can lead to abnormal attachment patterns that will be explored in the following section.

3.4.2 Trauma and Attachment

Trauma and/or stress can compromise a previously secure and organised attachment relationship or preclude the development of a secure attachment relationship (Lieberman, 2004, Schechter and Willheim, 2009). Developmental trauma is a concept developed over the past decade and refers to exposure to multiple, cumulative traumatic events, usually of an interpersonal nature, during childhood which results in developmentally adverse consequences (Busuttil, 2009, van der Kolk, 2005). Traumas can include the experiencing of physical, sexual and emotional abuse, neglect, loss, or disruption of primary attachment relationships and chronic emotional dysregulation of caregivers (Ford and Cloitre, 2009, Sarr, 2011).

Adrenal steroids (cortisol) play a key role in stimulating arousal via excitatory action on brainstem structures (Gunnar and Barr, 1998). In adults, this hormone is essential for increasing energy levels and concentration in response to a stressful event or to increase cognitive productivity (Born et al., 1987). As referred to previously, fear and stress are associated with elevations in the production of cortisol. Trauma is linked to altered cortisol reactivity which is associated with physical, emotional and behavioural difficulties (Nader and Weems, 2011). The same authors also suggest that early life stress may increase risk
for the development of mood, anger, anxiety and substance abuse disorders. A number of studies support this suggestion that early exposure to trauma/stress can become evident in adolescence in the form of ADHD, severe emotional disturbances, anxiety, social withdrawal, schizophrenia and criminality (Gunnar et al., 2009, Lupien et al., 2009). Poor economic conditions, prenatal stress or having a depressed mother in infancy correlate with higher levels of glucocorticoid (end product of the HPA axis) in adolescence (Halligan et al., 2007). In conclusion to their study, Nader & Weems (2011) inferred that lower cortisol levels are generally associated with externalising disorders such as ADHD and conduct disorder while higher cortisol levels are generally associated with internalising problems such as anxiety and depressive disorders.

Returning to Ainsworth’s attachment classifications, secure attachments are recognised as a protective factor for a child’s development with research showing that attachment security moderates cortisol levels in response to non-traumatic stressors (Gunnar et al., 1996, Nachmias and Gunnar, 1996). Insecure attachments, disorganised attachment in particular, carries the greatest risk of concurrent and future psychopathology and may relate to a child’s greater difficulty coping with traumatic and stressful experiences in later life (Breidenstine et al., 2011). Children from lower socio-economic groups are more likely to develop disorganised attachments (van IJzendoorn et al., 1999), with parents often severely stressed by economic and family instability (van der Kolk, 2014).

Both the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000) and the International Statistical Classification of Diseases and Related Health Problems (World Health Organisation, 1992) carry diagnostic criteria for Reactive Attachment Disorder (RAD). The emotionally withdrawn/inhibited type is characterised by the absence of organised attachment behaviours, low levels of social engagement and reciprocity, difficulties with emotional regulation, little or no comfort seeking when distressed and limited response to soothing by others (Zeanah and Smyke, 2009). The indiscriminately social/disinhibited type of RAD is characterised by a failure to display developmentally appropriate reticence with unfamiliar adults and a tendency to violate social boundaries (Breidenstine et al., 2011). RAD is rare and applicable generally to infants suffering severe neglect or raised in institutional settings with extreme and maladaptive caregiving environments (Zeanah and Smyke, 2009). While rare, this disorder highlights the importance of the caregiving environment to appropriate and secure attachment relationships. The next section will explore the impact of parental factors on a child’s attachment quality and subsequent development.
3.4.3 Attachment, Learning and Behaviour

The relevance of reviewing the literature pertaining to attachment lies in its connection to learning, cognition and ultimately behaviour. A number of authors make the link between insecure attachments, emotional self-regulation and learning. When children experience insecure attachment, they are unable to develop the capacity to self-regulate and experience intense feelings without the ability to modulate these themselves (van der Kolk, 2005, Cook et al., 2005). Emotional self-regulation is also the foundation for further self-organisation as it is the platform from which the child can begin to control and focus attention, plan actions and monitor social interactions (Gerhardt, 2013). Studies have shown that self-regulation is predictive of academic outcomes (Blair, 2002), while academic difficulties have been linked to smaller orbitofrontal volumes, the area of the brain affected by trauma/neglect induced stress (Hanson et al., 2010, Gerhardt, 2013). Deficits in the ability to modulate affect results in a lack of impulse control which in turn can result in withdrawal or acting out behaviours, with the aim of avoiding intense emotional states and to provide a subjective sense of control or mastery as a protective strategy (van der Kolk, 2005, Cook et al., 2005). Childhood maltreatment and trauma can also lead to developmental delay by altering brain structures as described earlier by Gerhardt (2013), which impacts on attention, learning and memory capacities (Ford, 2005).

3.4.4 Parental Factors

The reference to parental influences on child development including attachment patterns leading to cognitive and behavioural outcomes is wide reaching. The literature review has already established that secure attachments are less likely in environments that do not provide a secure, sensitive care giver that will provide the comfort and reassurance that disperses the cortisol levels in the HPA axis. However it is not just the care giving environment in which an infant finds itself that has call on attachment patterns and stress response systems. Prenatal experiences studied in primates affect how many cortisol receptors are present in the brain and thus how well the brain can regulate the stress response (Gunnar and Barr, 1998). This research is reflected in humans with evidence that mothers with substance abuse disorders, severe mood disorders, and borderline personality disorders all have children at increased risk for disorganised attachment (Lyons-Ruth and Jacobvitz, 2008). Another 2008 study analysing mother-infant interactions found that high risk mothers were less sensitive, more intrusive and less
discriminate regarding their infants behaviour (Cerezo et al., 2008). These mothers’ infants were consequently more likely to develop insecure attachments.

The connection between an adult’s early childhood experiences and their perspective on early childhood relationships was studied by Main et al. (1985), who developed classifications for adults that aim to reflect differences in how internal representations are organised, how they relate to caregiving interactional behaviour as well as infant preschool attachment categorisations. For example, a parent with an autonomous classification is expected to have a securely attached child and is deemed as a protective factor. While a parent with unresolved attachment pattern is considered a risk factor for externalising/internalising disorders, dissociative disorders and social incompetence (Breidenstine et al., 2011). Looking at protective factors for children from an Irish perspective, the risk of socio-emotional problems was reduced where the primary caregiver had degree-level education, was aged 30-39 at the time of the child’s birth and was not emotionally distressed (Watson et al., 2014).

The link between parental states of mind and infant attachment is documented in the literature. Parents with unresolved attachments resulting from traumatic experiences in their own lives are at increased risk of having a child with a disorganised attachment pattern. In one study, 53% of infants with disorganised attachment had mothers whose attachment classifications were unresolved, and 53% of mothers who were unresolved had infants whose attachments to them were disorganised (van IJzendoorn, 1995).

In summary, Gerhardt (2013) explains that children who have not enjoyed sufficiently warm and responsive relationships in their families or with other early caregivers may have great difficulty in learning and making use of new opportunities.

3.4.5 Co-Regulation

The literature also refers to the concept of co-regulation and its effect on attachment, cognition, behaviour and motor development. Co-regulation has been defined as the social process by which individuals dynamically alter their actions with respect to the ongoing and anticipated actions of their partner (Fogel, 1993). Co-regulated communication can be viewed as a system of continuously and mutually innovative patterns of aggregated co-activities (Fogel, 2000). It is thought that co-regulated activities and communication between mother and infant serve as an important context for the modulation of social dynamics, cognitive exploration and opportunities to experience emotional and physiological arousal that subsequently influence emerging self-regulatory strategies and
abilities according to Evans and Porter (2009). The same authors place co-regulation as an antecedent to the emergence of attachment security or insecurity in the pre-linguistic infant. They differentiate between attachment and co-regulation by arguing that the traditional requirements of a secure attachment (sensitivity, responsiveness, warmth etc.) focus on the contribution of individuals rather than jointly as ‘social partners’ who are engaged in a ‘co-creative process.’

3.4.6 Parent-Child Co-Regulation

A number of studies have looked at the quality of parent-child co-regulation and ‘mutuality’. Parent-child mutuality is comprised of emotional reciprocity, co-responsiveness and cooperation, which together represent aspects of co-regulation of emotion and behaviour (Deater-Deckard and Petrill, 2004). This study examined individual differences in dyadic mutuality and possible genetic and environmental factors on behaviour outcomes in children. The results showed correlations between lower levels of mother-child mutuality and higher levels of child behaviour problems. Mother-child interactions that are less coherent and lack emotional and behavioural reciprocity were found to be more prevalent among children with behaviour problems. The mutuality construct was found to capture at the behavioural level some of the underlying co-regulation of internal states that is itself linked to self-regulation. In terms of siblings, the more genetically similar they were to each other, the more similar they were in their mutuality with their mother. This meaning that genetic factors such as temperament, behaviours, emotions have an effect on mother-child mutuality and co-regulation.

Evans & Porter (2009) examined the emergence of mother-infant co-regulation in the infants first year and establishing links to developmental status and attachment. They found differences in co-regulated interactions at 6 months were linked to both developmental status at 9 months and attachment outcomes at 12 months, suggesting an important antecedent role of early patterns of dyadic co-regulation to later development status and attachment organisation. More specifically, symmetrical co-regulation at 6 months predicted infant mental and motor development at 9 months. The findings also support the hypothesis that the quality of co-regulated interaction can increase or decrease mental and motor capabilities of the infant. The authors therefore conclude that parents who are able to provide a structure of interaction which fosters reciprocal, symmetrical communication are helping the child to discover and expand his/her developmental capacities. Finally, co-regulation patterns at 6 months were found to be a determinate of attachment quality at 12 months with higher levels of symmetrical co-regulation associated
with secure attachments while higher levels of unilateral co-regulation linked with insecure attachments.

3.4.7 Co-Regulation and Learning

One of the goals of co-regulation is the development of self-regulation or adaptive learning. Three features promote adaptive learning. Firstly, adaptive learning is enhanced by the co-regulation of responsive and contingent environments that demonstrate and validate the link between actions and outcomes. Secondly, adaptive learning is enhanced by the challenging opportunities that teach students how to reach for the not-yet attainable, risk failure, and develop self-confidence. Thirdly, adaptive learning is enhanced by supportive relationships that can mentor and demonstrate the meaning of responsibility and commitment within an ‘arena of comfort’ as described by (Simmons and Blyth, 1987).

McCaslin (2009) concludes that emergent identity is a continuous process of participation and validation that is co-regulated by personal, cultural and social influences and the relationships among them. A similar perspective is found in the occupational therapy literature. MacCobb (2012) writes that the focus of therapy may be to experience an enhanced sense of competency and mastery, autonomy, a positive sense of personal identity and of belonging through enjoying and participating in ‘doing’ especially in a shared context of ‘we-ness’ (p.62).

3.4.8 Teacher-Student Co-Regulation

Co-regulation has been discussed from the perspective of the mother-child relationship, however there is a dearth of literature published surrounding the co-regulation relationship between a teacher and student. McCaslin (2009) has written about co-regulation of student motivation and emergent identity. One of the author’s aims is to illustrate the potential of the co-regulation model in understanding how elementary school students make school personally meaningful and how this understanding can inform student motivation and identity. McCaslin (2009) refers to co-regulation as the relationships among cultural, social and personal sources of influence that together challenge, shape and guide identity. Identity is described by the author as a continuous process that emerges through participation and validation in social and cultural relationships. She uses the model of emergent interaction to suggest the role of motivation in identity development. Emergent interaction is defined as the process through which an individual comes to mediate and internalise social and cultural influences (Wertsch and Stone, 1985). McCaslin describes
emergent identity as the integration of self and other through engagement of activities that inform personal meanings which leads to an emergent identity. Opportunities that afford engagement in activities are part of the dynamics of emergent interaction and identity. Vygotsky’s ‘zone of proximal development’ (ZPD) (Vygotsky, 1962, Vygotsky, 1978) has a central role in the learning process. Co-regulation of the zone of proximal development involves participation, activity and engagement in a mutual relationship wherein each participant has two roles, both the expert and the novice (Yowell and Smylie, 1999). The author emphasises the importance of participation, stating that it is the essence of the ZPD, co-regulated learning and emergent identity. Participation in opportunities and interpersonal validation is central to emergent identity.

As noted previously, a paucity of research exists relating specifically to teacher-student co-regulation and its potential benefits. However, Tronick’s (1998) application of the Mutual Regulation Model to the therapist-patient relationship, offers an opportunity to compare the model to the teacher-student relationship also. The Mutual Regulation Model is described as the capacity of the interactants to appreciate the meaning of the affective displays of their partner and to scaffold their partner’s actions so that they can achieve their goals. It is this mutual regulation that allows for the development of dyadic states of consciousness between mother-child or therapist patient. The Dyadic Consciousness hypothesis states that each individual in the mother-child or therapist-patient relationship, is a self-organising system that creates his or her own states of consciousness which can be expanded into more coherent and complex states in collaboration with another self-organising system. In the case of therapist-patient, Tronick argues that this dyadic state reorganises aspects of the patient’s state of consciousness in other relationships. This reorganising through dyadic interactions can be compared with the Processes Transforming Occupation model (Humphry, 2005) as described by MacCobb (2012). The model proposes that change will originate from multiple synergistic forces such as those allowed for or supported by the young person’s social group, occupations that are observed and scaffolded during shared occupation with more skilled partners and that as the reason for doing the desired activity changes, the student reorganises himself for doing. While not documented in the same language, theory and frameworks, comparisons to the teacher-student relationship, particularly in special education such as was described in Mihalas et al (2009) could be made.
3.4.8.1 Summary

As can be seen from the literature in this area, students presenting with SEBD in schools in areas of social disadvantage inherit challenges arising from the socially and economically impoverished environments into which they are born. Many of these challenges can be attributed to generational attachment issues which influences the development of quality relationships and the ability to co-regulate.

Sensory processing plays a role in the attachment experience as well as being central to all later learning and behaviour (Ayres, 1979b). Therefore, the next section examines sensory integration theory as a framework for understanding behaviour manifestation and as the foundation principles for the Movement Matters programme.
3.5 Sensory Integration Theory

This section of the Literature Review aims to lay a foundation of knowledge and evidence leading to the development of the Movement Matters Programme. While the intervention does not adhere to the strict criteria of Ayres ‘Sensory Integrative Approach’ (Ayres, 1972, Ayres, 1979) in terms of its implementation, it is very much grounded in the theory of sensory integration, modulation and self-regulation.

Occupational therapy that is informed by a sensory integrative approach is designed to guide intervention for children who have difficulty processing sensory information which restricts participation in daily life activities (Schaaf and Miller, 2005). The goal of intervention is to improve the ability to process and integrate sensory information and to provide a basis for improved independence and participation in daily life activities, play and school tasks. (Schaaf and Miller, 2005). The following sections explain the definition and key concepts in Ayres theory of sensory integration (Ayres, 1972, Ayres, 1979) and relates this to an understanding of behaviour relevant to the school population under study.

3.5.1 Definition

Sensory integration is the ability to take in sensory information through our senses, combine it with prior information, memories and knowledge stored in the brain, and make a meaningful response (Murray-Slutsky and Paris, 2005). Normal sensory integration allows the child to interact appropriately with his/her environment. Sensory integration is a neurological process that occurs automatically with little conscious awareness. It occurs in the midbrain and brainstem levels and is involved in complex interactions with the brain areas that are responsible for the development of coordination, attention, arousal levels, autonomic functioning, emotions, memory and high order cognitive functions (Murray-Slutsky and Paris, 2005).
Sensory integration (SI) is theorised to form crucial foundations for later, more complex learning and behaviour (Ayres, 1979b). Its regard and respect as an approach is reflected in the 90% of American school based occupational therapists who use the sensory integration theory and principles in their interventions with students with learning disabilities, ADHD, autism and behaviour difficulties (May-Benson and Koomar, 2010).

3.5.2 The Senses

The nervous system recognises the sensations of touch, hearing, sight smell, taste and the movement senses of proprioception and vestibular. Tactile, proprioceptive and vestibular input are particularly important in affecting the way we experience the world.

3.5.2.1 Tactile/Touch

The touch or tactile sense is located in the skin and mouth. Effective processing of tactile information allows us to feel safe and promotes bonding with others and consequently promotes social and emotional development. The tactile system processes sensory information through the discriminatory and protective systems. The discriminatory system allows us to determine what is being touched and to figure out the spatial characteristics...
of objects. The protective system warns us when we are in contact with something dangerous or threatening and causes a fight or flight reaction.

3.5.2.2 **Proprioception**

Proprioception is the body position sense and tells us where our body parts are in space and how they are moving. The receptors for this sense are located in the muscles and joints of the body and are activated during joint traction, compression or resistance to movement. The proprioceptive system tells us how hard we are pushing or pulling something and allows us to measure how much pressure to apply during tasks. Proprioception is considered the cornerstone of sensory integrative interventions due to its capacity to calm arousal levels in overstimulated individuals and regulating other sensory systems when overloaded (Murray-Slutsky and Paris, 2005). For example, a mother applying deep pressure proprioceptive input to their child in the form of a hug following a fight/flight response to an uncertain tactile input in the form of a spider crawling across his/her leg. Also, proprioceptive rich activities help increase the feedback a child receives from his/her motor movements, improves body awareness, normalises arousal levels and aids self-regulation.

3.5.2.3 **Vestibular**

The vestibular sense detects our head movements relative to gravity and is key in the maintenance of balance. The receptors are located in the semi-circular canals of the inner ear and provide information relating to the pace and direction of our movement through space. Vestibular input contributes to our sense of balance, head control, eye gaze, bilateral coordination muscle tone, posture and contributes to a child having core stability both physically and emotionally (Murray-Slutsky and Paris, 2005). Vestibular input also plays a key role in regulating arousal levels. Fast movements are alerting while slow movement is relaxing. Linear (up/down, forward/backward) movements tend to be organising and calming while rotary movements alert and disorganise the nervous system.

The senses outlined above never work in isolation. The execution of functional tasks such as eating, writing, dressing and playing sports involves the successful integration of incoming sensory information with other sensory, environmental and experiential information.
3.5.3 Sensory Processing Disorder

Sensory Processing Disorder (SPD) occurs when the brain is unable to organise sensory information (Murray-Slutsky and Paris, 2005). Characteristics of SPD include difficulties with attention, arousal, organisation of behaviours, motor planning and coordination, difficulties processing and fluctuations in emotions and behaviour. It is estimated that 12-30% of all children have difficulties with sensory processing (Ben-Sasson et al., 2009). Sensory processing dysfunction frequently coexists with other diagnoses such as learning disabilities and attention deficits (Mulligan, 2003). Children without specific disabilities or medical conditions are frequently challenged by inefficient sensory processing to such a degree that they require intervention (Murray-Slutsky and Paris, 2005).

3.5.4 Neurological Thresholds

An individual’s neurological threshold determines how much sensory input is required to start firing a response in the nervous system, sending brain currents through the deep structures of the brain and onto the cortex. The brain either responds or ignores this information depending on intensity, duration and frequency of the sensory input. This balance in the brain helps maintain focus and arousal in order to act on the sensory information (Lombard, 2011). Sensory input plays a key role in changing arousal levels. At one extreme, individuals with a high neurological threshold need a lot of sensory input to start the firing process in the brain because too much habituation occurs. Habituation is when the brain recognises too much information as familiar or unimportant and ignores it (Lombard, 2011). This is a crucial process to block out unimportant information so the brain can focus on the important, but the high threshold individual uses too much habituation and the brain under responds. In school, a student with a high threshold may present as lethargic and disengaged due to their low registration of sensory information. Alternatively, students with high thresholds may seek sensory input through movement, fidgeting and talking to maintain their arousal levels. At the other extreme, individuals with low neurological thresholds need very little sensory information to start the firing process of the brain due to over sensitising (Lombard, 2011). Sensitising is when the brain identifies something as new and potentially dangerous and responds to it. This is an important process so that the cortex can attend to the important. However, low threshold individuals use too much sensitising and the brain over-responds. In the school context, a student with a low neurological threshold may avoid occupations and/or environments that they have learned cause discomfort and over-arousal such as noisy P.E. halls, toilets or home.
economics room and art. Alternatively, students may become overwhelmed, distressed
and potential aggressive when exposed to these environments that overload their
modulation systems.

3.5.5 The Influence of Social and Environmental Factors

Sensory integration is a framework that can be used to understand developmental
problems in children who may have experienced deprivation of sensory input as a result
of institutionalisation, international adoption and/or poverty (Jacobs et al., 2010, Wilbarger
et al., 2010, Cermak, 2001). As a child perceives, interprets, analyses and integrates
sensory information, he or she gains knowledge about his or her body and the
environment, which forms an important basis for learning, development and behaviour
(Roley, 2006). A child growing up in an impoverished environment may be at increased
risk of sensory integrative problems, behavioural problems and developmental delay due
to maternal deprivation, lack of opportunities for environmental sensory exploration, lack
of handling by caregivers and lack of opportunities for social interaction (Schaaf and Roley,
2006). This is of particular relevance to the educational settings that NBSS occupational
therapists practice in, with the majority of schools situated in areas of social disadvantage.

3.5.6 A Framework for Understanding Behaviour

The combination of the sensory integration framework as well as the literature on the effect
of traumatic experiences on neurological functioning of the brain (van der Kolk, 2005,
Gerhardt, 2013, Nader and Weems, 2011), could provide teaching professionals with an
insight into factors that affect a student’s development and ultimately behaviour traits and
learning in the classroom. Sensory processing difficulties are often observed in the
classroom environment, and present as a challenge for educational staff to determine the
cause and understand the reason for a student’s poor performance and behaviour in
school (Miller-Kuhaneck et al., 2007).

Schaaf & Miller (2005) emphasise the importance of the collaborative approach, whereby
the therapist interacts with parents and teachers to;

- Assist them in understanding the child’s behaviour from a sensory perspective.
- Adapt the environment to the needs of the child.
- Create needed sensory and motor experiences throughout the day in their natural
  environments.
• Assure that intervention is helping the child become more functional in their daily life activities.

It is this perspective that has guided occupational therapy interventions with a sensory integration approach within the NBSS model of support (MacCobb, 2012). Another aspect of sensory integration theory is the ‘Environmental Matrix Model’ (Richter and Oetter, 1990) (Figure 5). This model refers to four different therapeutic spaces that create diverse atmospheres and promote four distinct types of learning and development. Each space refers to a stage in child and adolescent development, from a foetus in the womb, a toddler with his/her mother to the childhood mastery of movement, academic and social challenges.

![Figure 5: The Environmental Matrix Model (Richter and Oetter, 1990).](image)

3.5.7 Modulation and Arousal

Sensory modulation refers to the ability of the nervous system to regulate, organise and prioritise incoming sensory information, inhibit irrelevant information and help the individual focus on the relevant information. Poor modulation is a problem in the capacity to regulate response to sensory input in a graded manner that disrupts the ability to achieve and maintain an optimal range of performance necessary to adapt to challenges of life (Miller and Lane, 2000). Children with poor sensory modulation are reported to over or under respond to normal levels of stimuli in their environments manifesting as behavioural difficulties in a classroom setting (Schaaf and Miller, 2005). Effective sensory modulation results in appropriate arousal and self-regulation. Arousal is state of one’s nervous system, describing how alert one feels. To attend, concentrate and perform tasks in manner
suitable to the situational demands, one’s nervous system must be in an optimal state of arousal for that task (Mercer and Snell, 1977). The reticular formation, limbic system, vestibular system and cortex all play key roles in the maintenance of the ‘calm alert state’ (Ayres, 1972b, Ayres, 1979b, Oetter et al., 1993). The ‘calm alert state’ is a window in which our ability to function is maximised and is the optimal level of arousal for learning (Murray-Slutsky and Paris, 2005).

3.5.8 Self-Regulation of Arousal

Self-regulation is the ability to attain, maintain and change arousal appropriately for a task or situation (Williams and Shellenberger, 1996). In the school setting, this translates as being able to focus on learning activities and cooperate with others in class (MacCobb et al., 2014b). The Alert Programme (Williams and Shellenberger, 1996) is a systematic experiential learning programme that enables children to understand basic sensory integration theory in order to monitor, maintain and change their level of arousal/alertness so that it is more appropriate to a situation or task (Barnes et al., 2003). The programme particularly supports the development of self-regulation among students who experience poor sensory modulation. Poor modulation is a problem in the capacity to regulate response to sensory input in a graded manner that disrupts the ability to achieve and maintain an optimal range of performance necessary to adapt to challenges of life (Miller and Lane, 2000). Children with poor sensory modulation are reported to over or under respond to normal levels of stimuli in their environments manifesting as behavioural difficulties in a classroom setting (Schaaf and Miller, 2005). Self-regulation is the ability to inhibit the autonomic response and do something else in order to plan and control ones behaviour (Willingham, 2011). In the school setting, this translates as being able to focus on learning activities and cooperate with others in class (MacCobb et al., 2014b). Figure 6 below describes the relationship between an individual's neurological thresholds and their behavioural self-regulation strategy. This model developed by Dunn (1997), refers to four patterns of sensory processing with the first two referring to hyposensitivity (low registration and sensation seeking) and the other two patterns referring to hypersensitivity (sensory sensitivity and sensation avoidance).
3.5.9 Attention Deficit Hyperactivity Disorder and Sensory Modulation Disorder

Students diagnosed with either of these disorders can manifest the associated behaviours in similar ways. They are however different. Children with ADHD are impulsive, inattentive and hyperactive while children with SMD have difficulty responding adaptively to daily sensory experiences (Miller et al., 2012). ADHD has an estimated worldwide prevalence rate of 5.29% (Bilton and Cooper, 2013) while the occurrence of sensory symptoms is estimated to be 5-16% in the normal population and 30-80% in individuals with developmental disabilities (Ben-Sasson et al., 2009). A comparative table detailing the behavioural characteristics of each subtype of both disorders can be seen overleaf.
Table 1. Behavioural Characteristics of Attention Deficit Hyperactivity Disorder and Sensory Modulation Disorder.

<table>
<thead>
<tr>
<th>ADHD</th>
<th>SMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inattentive</td>
<td>Sensory-Under-Responsive</td>
</tr>
<tr>
<td>Characterised by an impaired ability to focus, sustain and switch attention.</td>
<td>Describes children who respond less to or take longer to respond to input. They appear withdrawn, have difficulty listening, following directions, knowing where their body is in space and initiating movement.</td>
</tr>
<tr>
<td>Hyperactive and Impulsive</td>
<td>Sensory-Seeking/Craving</td>
</tr>
<tr>
<td>Characterised excessive and situationally inappropriate motor activity and limited inhibitory control of responses.</td>
<td>Describes children who seek out high intensity or increased duration of sensory stimulation.</td>
</tr>
<tr>
<td>Combined</td>
<td>Sensory-Over-Responsive</td>
</tr>
<tr>
<td>Difficulty controlling impulsive behaviour, sustaining attention and regulating activity levels.</td>
<td>Feel sensations too intensely, for longer duration than is typical and/or may over react with atypical behaviours such as temper tantrums, screaming or moving away from stimulation (Miller et al., 2012).</td>
</tr>
</tbody>
</table>

Due to the overlap of symptoms of children presenting with ADHD and SMD, Miller et al. (2012) sought to differentiate the two disorders both behaviourally and physiologically. They found that children with ADHD differed from children with SMD on measures of emotional, attentional and sensory related behaviours as well as physiological reactivity to sensory stimuli. This distinction is important in terms of treatment selection as children with ADHD benefit from medication or therapies that focus on cognitive strategies to improve attention, hyperactivity and impulsivity whereas children with SMD benefit from occupational therapy using a sensory-based approach (Miller et al., 2007b).
3.5.10 Anxiety

The link between sensory over-responsivity (SOR) and anxiety has been well established in the literature (Pfeiffer et al., 2005, Kinnealey et al., 2011, Neal et al., 2002, Reynolds and Lane, 2009). Theorists such as Ayres have suggested that anxiety develops due to faulty information processing as well as a hypersensitivity to information and stimuli in the environment (Ayres, 1972). Anxiety has also been found to coexist frequently with an ADHD diagnosis (Pliska, 1998, Pliska, 2000, Jensen et al., 2001). From a clinical perspective, Lane et al. (2010) found it likely that ADHD, SOR and anxiety disorder exist independently, yet overlap consistently in ways that influence the behavioural presentation of the child. The same authors also found that children diagnosed with ADHD and SOR had higher cortisol levels than those with ADHD without SOR and typical children when exposed to sensory stimuli. This finding is consistent with other work that links cortisol reactivity in early life to the development of physical, emotional and behavioural difficulties later (Lupien et al., 2009, Gunnar et al., 2009). Nader and Weems (2011) found that higher levels of cortisol are associated with internalising problems such as anxiety and depressive disorders which are likely products of SOR as individuals become can become withdrawn and passive in order to avoid the unpleasant experience of sensory inputs or aggressive and unpredictable in response to sudden sensory sensitivities (Lane et al., 2010). Importantly, Lane et al. (2010) conclude their study by suggesting that children with ADHD, anxiety and SOR may show more improvements in function and behaviour when treatments target their specific sensory modulation deficits along with problems associated with ADHD and anxiety.

3.5.11 Evidence Base

Sensory integration theory and interventions has been increasingly researched over the past four decades. However, a critical need for more randomised control trials exists (Miller et al., 2007a). This dearth of ‘gold standard evidence’ has slowed recognition of the intervention approach amongst other professionals. The ‘American Academy of Paediatrics state that, “challenges exist for evaluating the effectiveness of sensory integration therapy, including the wide spectrum of symptom severity and presentation, lack of consistent outcome measures and family factors which make response to therapy variable” (Zimmer and Desch, 2012, p.1187). This is a perspective shared by Schaaf and Miller (2005) who explain that the knowledge base in the field of sensory integration and developmental disabilities is in its infancy and requires rigorous empirical data before
conclusion on effectiveness can be made. This perceived lack of evidence resulted in Sensory Processing Disorder (SPD) being excluded from the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (American Psychiatric Association, 2013).

May-Benson & Koomar (2010) concluded their systematic review suggesting that the S.I. approach may result in positive outcomes in the areas of sensorimotor skills, motor planning, socialisation, attention, behavioural regulation, reading and reading related skills. They also recommend that, "occupational therapy practitioners need to assess efficacy research not just from the perspective of whether it is effective but also from the perspective of how it is effective" (p.412). This reference to practice based knowledge is evident in the Queensland Department of Education guidelines for ‘Supporting Student with Sensory Processing Challenges’. The guidelines conclude that information from empirical research is only one facet of information considered when making practice decisions (Copley et al., 2010). Occupational therapists have a professional responsibility to consider broader knowledge bases relating to individuals and their contexts when striving for effective decision making in practice (DET, 2011).

3.5.12 Physical Exercise and Student Attention

While questions remain over the effectiveness of sensory integration interventions due to research quality and quantity, there is evidence for the benefits of physical exercise on student’s attention and concentration abilities (Smith et al., 2013, Hoza et al., 2015). Mahar (2011) reviewed the research in this area and found moderate to good evidence that physical activity during the school day improves attention to task in elementary school students. Whit-Glover et al. (2013) reviewed the research on various in-class physical activity programmes and concluded that “short physical activity breaks during the school day may improve student behaviour and on-task behaviour and improve some measures of health” (p.6). One of the programmes included in their review was the ‘Energiser’. In a separate study, it was found that there were significant improvements in directly observed on task behaviour consequent to participation in the Energiser Programme. It was particularly effective for the least on-task students with a 20% improvement in on-task behaviour amongst this cohort (Mahar et al., 2006).

Having outlined the sensory integration theory as a framework for understanding behaviour and as the foundation for the Movement Matters programme, the review will now look to the occupational therapy literature to establish current practice in schools and later with students with social emotional and behavioural difficulties.
3.6 Occupational Therapy in the School Setting

Much of our understanding of occupational therapy practice within school settings is emerging from research in North America with limited evidence available from the Irish context. School-based occupational therapy is designed to enhance the student’s ability to fully access the curriculum and be successful in school (American Occupational Therapy Association, 2010). Occupational therapists have the knowledge and skills in the biological, physical, social and behavioural sciences to evaluate and intervene with individuals across the life course. In school based settings, occupational therapists use their unique expertise to help children and youth with and without challenges prepare for and perform important learning and developmental activities within their natural environment (American Occupational Therapy Association, 2011).

3.6.1 Models of Service Delivery

Bundy (1995) identified three ways of delivering services to schools. Direct, indirect and consultation. Direct service involves the student receiving ‘hands on’ intervention from the occupational therapist with the goal of improving skills. Disruption of the student’s participation in educational programmes is seen as a major limitation of this approach. Indirect service aims to refine skills or maintain function through an educational approach in which the teacher administers a procedure with the student following training from the occupational therapist. The consultation approach aims to change the human and non-human environment by providing intervention to address the physical and social environments of schools. With such an approach, measurement should focus on change in the physical, academic or social environment (Spencer et al., 2006). Adapting the social environment can occur through developing strategies for interpreting student behaviour to enable more effective teacher-student interactions. Physical adaptations can be directed in the classroom, with regard to learning materials or school facilities and amenities. The literature indicates that a combination of direct, indirect and consultation approaches will effectively meet the diverse needs of students with disabilities in schools (Bayona et al., 2006, Case-Smith and Cable, 1996, King et al., 1999). Laverdure & Rose (2012) propose that occupational therapists are ‘change agents’ in school settings. According to them, the objective of therapy services is not to remediate impairments in body functions and structures but to ensure that a student can access and participate effectively in school activities of choice and benefit from learning opportunities. Campbell et al. (2012) and Hutton (2009) recommend school based occupational therapy within the context of the
whole school rather than focusing on individual children. This recent shift from direct service delivery focused on individual student goals, to consultative services focused on capacity building of school staff as part of a cost effective and quality service delivery for diverse student populations is evident in the work of Missiuna et al., (2012) and Chu (2017) whose practice is rooted in a multi-tiered continuum of support model.

In Ireland, these international developments in occupational therapy school practice are reflected in the National Council for Special Education’s announcement that occupational therapy support will be gradually made available to all schools under a multi-tiered continuum of support model (NCSE, 2018). The first step of this process is the Demonstration Project on In-school and Early Years Therapy Support running in the 2018/2019 academic year (DES, 2018). This study is particularly timely in light of these national developments and is well positioned to make recommendations regarding future occupational therapy practice in Irish schools.

3.6.2 Collaboration

Other authors have focused on the method of practice employed within schools with recent focus placed on collaboration and occupation based approaches. Laverdure and Rose (2012) identify four key competencies occupational therapists require to deliver educationally relevant services. Practitioners should be competent in clinical reasoning, best practice in educational settings, promoting student self-efficacy, empowerment and belonging as well as developing and maintaining collaborative partnerships. This collaborative partnership includes “the caregiver who is an expert on their child, the teacher who is expert in learning and the student who is an expert in their needs and strengths” (p. 354). Collaboration is defined as a “process of problem solving by team members, each of whom contributes his or her knowledge and skills and is viewed as having equal status” (Rainforth et al., 1992, p. 11).

Another approach to school based occupational therapy brings together the approaches of consultancy and collaboration previously discussed. ‘Collaborative consultation’ is an increasingly adopted approach in school support due in part to the shift towards inclusive education (Villeneuve, 2009). Inclusive education promotes the provision of services and supports so that students with disabilities are served to the optimum extent possible in the mainstream education setting (Hutchinson, 2007). Collaborative consultation is defined as an interactive problem solving process that enables people with diverse expertise to generate creative solutions to mutually defined problems (Idol et al., 2000).
Within this more recent context of inclusive education, occupational therapy has shifted from providing direct intervention in isolation, to providing consultancy support to educators to support student development. School based occupational therapy consultation has been characterised as collaborative because the interactions with educators are dependent upon shared expertise to generate creative solutions to mutually defined problems (Case-Smith and Rogers, 2005). While a collaborative approach to school based occupational therapy practice is recommended in recent years (Dettmer, 2009), Wintle et al. (2017) found that this collaborative process can be impeded by tensions at the level of the person and the environment and these tensions can influence each other. They recommend that more high quality research investigating potential methods for improving the collaboration experience is needed. Bonnard and Anaby (2015) note that applying occupational therapy models in the school setting can be a challenge and therapists “may need enhanced knowledge on the educational environment and potential breadth of the practice area” (p.3). A number of authors recommend that therapists receive opportunities to further develop key skills required for collaborative consultative service delivery and knowledge transfer such as relationship building and coaching which would support their role in the educational environment (Hutton, 2009, Laverdure, 2014, Missiuna et al., 2012, Villeneuve, 2009). More recently, Pollock et al. (2017) and Bucey and Provident (2018) have contributed further to our understanding of what can be done to facilitate and support this practice change within occupational therapy. Pollock et al. (2017) recommend that multifaceted training, mentorship and support over a period of time are essential to facilitate and sustain a significant change in practice. Mentorship and peer support are key mechanisms to support practice change with ‘communities of practice’ identified as particularly beneficial to sustain change. Those in management must consider the human and fiscal resources required to establish and maintain such support structures for the long term benefit of the professionals tasked with implementing a capacity-building model in schools. Bucey and Provident (2018) found similar results when they evaluated a six-week peer mentoring experience with school based occupational therapists providing collaborative consultative services. The peer mentoring structure was purposefully created to empower the therapists to encourage one another while attaining their self-determined goals. This programme was found to be an effective way of engaging and motivating therapist to take action toward practice change. Similar to the findings of Pollock et al. (2017), the peer mentoring programme provided a vital practice community and structure for professional development that, despite the often reported barrier of time, promoted practice application of evidence based resources.
3.6.3 Shared Philosophical Perspectives

It is relevant at this point following references to the literature on occupational therapy and teaching collaborative practice to highlight shared philosophies underpinning both disciplines. John Dewey is recognised within the literature as one of the most influential American philosophers and educationists of the 20th century who gave new direction to educational theory and practices (Sikander, 2015). Dewey rejected the traditional authoritarian teaching structures and practices in the American education system at the turn of the 20th century and advocated for pedagogical reforms and curricula that held the child at the centre at all times. Dewey differed from other major theorists of the time such as Rousseau, Pestalozzi and Froebel who believed that access to education was sufficient for children to absorb knowledge and develop naturally. He believed that the subject matter alone was not a guarantee of learning and development, but rather, the teacher should plan and connect the subject matter to the students, keeping in mind the needs, desires, interests, and cognitive development of the students (Dewey, 1910). Dewey also viewed education as more than just knowledge assimilation. He viewed it as a continuous process for the child in which their learning experiences contribute to the development of social competence as well as knowledge retention and academic growth. These learning experiences should have a clear purpose, an understanding of the surrounding conditions, knowledge of what occurred before, so that it could allow reflection and analysis of issues and experiences (Sikander, 2015). This experiential learning or ‘learning by doing’ was informed by the philosophies of humanism and pragmatism in which direct experience and holding the child as the ‘main actor’ in the learning were the foundations. Experiential learning, according to Dewey offered students a hands on, collaborative learning experience which supports them in learning new skills and knowledge (Haynes, Sakai, Rees, Gilbert, Frith & Passingham, 2007). Dewey’s pragmatic view of education also emphasised the experience of learning with others such as peers and teachers as important in order that mutual accommodation and adaptation develops. This ability to accommodate and adapt within the experience of learning was deemed to be important especially in the context of adolescence where making choices among desirable alternatives is vitally important in the building of character (Cunningham, 1994).

Dewey held strong views in relation to the role of the teacher in his educational philosophy which are of particular relevance in light of the position of the Behaviour for Learning teachers in the lives of the students they work with. Firstly, Dewey viewed teachers as members of the community of learning who play a major role in selecting experiences and
give proper direction to these educative experiences. He did not believe in a one-for-all concept of teaching and learning and promoted learning processes that were planned around the learners’ former and present experiences in line with their aptitudes. As Dewey viewed the child as inherently curious, social and constructive, it is the responsibility of the teacher to plan positive and constructive environments for students in order to create positive educational experiences for them. Such environments are built in the joint partnership of teachers and students, where together they try out effective techniques of teaching and learning. John Dewey also applied his principles of experiential learning to the educators and other professionals with whom he worked to promote the development of reflection on experience. He viewed learning for adults as a continuous and cumulative process with prior learning the fuel for further understanding and insight. Most importantly for professionals embarking on a new career or experienced professionals breaking ground in new practice contexts, Dewey refers to the ‘discomfort’ during experiences that lead to a more balanced state following time to focus, reflect and reach clarity of thought. He explains that “the function of reflective thought is, therefore, to transform a situation in which there is experienced obscurity, doubt, conflict, disturbance of some sort into a situation that is clear, coherent, settled, harmonious" (Dewey, 1933, p.100).

The influence of John Dewey’s work is also evident in the philosophical foundations of occupational therapy (Quiroga, 1995; Hooper & Woods, 2002) as well as in the occupational science literature (Aldrich & Cutchin, 2013; Boisvert, 1998; Cutchin, 2013). Dewey conceptualised ‘occupation’ in his writing and referred to it as a focal activity within the elementary school he directed. He described it as “a mode of activity on the part of the child which reproduces, or runs parallel to, some form of work carried on in social life. In the University Elementary School these occupations are represented by the shop-work with wood and tools; by cooking, sewing, and by the textile work. The fundamental point in the psychology of an occupation is that it maintains a balance between the intellectual and the practical phases of experience. As an occupation it is active or motor; it finds expression through the physical organs, the eyes, hands, etc. But it also involves continual observation of materials, and continual planning and reflection, in order that the practical or executive side may be successfully carried on. Occupation as thus conceived must, therefore, be carefully distinguished from work which educates primarily for a trade. It differs because its end is in itself; in the growth that comes from the continual interplay of ideas and their embodiment in action, not in external utility” (Dewey, 1899; 1976, p.92). Dewey employed this concept of occupation as central to his new view on education. He interpreted occupations as important modes of activity with natural and therefore social
experience. Occupations were deemed to foster inquiry via observation, planning and reflection resulting in the growth of the children in his school. Dewey’s perspective on occupation is summarised well in the following three statements by Cutchin (2013):

(a) “occupation is a form of natural and social experience,
(b) occupation is a primary means of fostering and structuring processes of inquiry that allows people to practice and hone habits and skills related to later inquiries, and
(c) occupation is a good way of having aesthetic experiences and thereby a way of learning to live more meaningfully in the future” (p.293).

In conclusion, Cutchin (2013) offers a thought provoking statement in relation to the importance of occupation and occupational therapy to society. The author proposes that occupation is practically important as a mode by which people experience and practice getting better at living in particular situations, and thereby, making life better in the future regardless of their situation. Occupation is also theoretically important as a subject-matter into which we inquire scientifically to help understand and suggest how to improve that process for individuals and communities. The profession of occupational therapy is proposed as important in integrating the practice and theory of occupation into the societal structures where individuals encounter problems such as schools.

As has been outlined above, the disciplines of teaching and occupational therapy have developed over time under the influence of similar philosophies and theorists. Most notably, they share a view of child centred inquiry and adopt a pragmatic approach to problem solving and learning which bodes well for the continued emergence of collaborative practice between the two disciplines. However, the theory and philosophy that Dewey promoted and studied was not without its critics. “The most important criticism is his lack of clarity as to how to set up systems that can see through the inception of ideas to the conclusion of the experiences, to gauge the growth and development, and to design, and plan curriculum clearly” (Sikandar, 2015, p.198).

3.6.4 Occupation Centred Practice

Cutchin (2013) makes reference to the struggle within the discipline of occupational science and occupational therapy regarding its place within the medical, reductionist view of health versus the occupation based lens which takes into account the socio-cultural dimension of life. Ericksen (2010) advocates for a “move towards a vision of client centred, occupation based practice” (p. 68). Occupation is defined as culturally valued, coherent patterns of actions that emerge through transactions between the person and the
environment and as activities that the person either wants to do or is expected to do (Humphry, 2005). For occupational therapists, occupation is the lens through which experiences are viewed, the destination towards which opportunities are focused and the means through which goals are attained (Hinder and Ashburner, 2010).

One of the major occupations of children are school related activities. These occupations require a broad range of social, motor and cognitive skills of the child in order to be successful. However, from a student’s perspective, the social experience of school can be more important than the academic success (Hinder and Ashburner, 2010), with motivation, attitude and self-perception having a strong impact on learning (Jalongo, 2007). Children are more likely to seek optimal challenges if they have experienced success and avoid challenging tasks if they have experienced failure, exclusion or criticism (Case-Smith et al., 2005). This emphasises the importance of the ’just right challenge’ when planning activities and interventions for children with learning difficulties in particular. Research has shown that tasks that are moderately difficult or new to the learner (vs inaccessibly difficult or automatically solved) can promote refinement of affective and intellectual regulation, reasoned risk taking, and learning from failure (McCaslin, 2009). The successful adaptive response to the demands of the task and situation stimulates feelings of mastery and a sense of oneself as a competent being (Parham and Mailloux, 2010). Ericksen (2010) in a critical reflection on school based occupational therapy found that there was an emphasis on identifying and remediating impairments in students instead of using occupation to achieve their goals. Assessment tools were found to be frequently used to measure impairments that could not be changed with therapy all too frequently done “to” children instead of “with” children. Cutchin (2013) summarises the value of occupation focused therapy when he says that “occupation does not lead directly to health or other physical outcomes. What occupation does is make people better at living and through enquiry, it changes their situations for the better” (p.294).

3.6.5 Occupational Therapy and Social, Emotional and Behavioural Difficulties.

Having reviewed some of the literature pertaining to occupational therapy practice in schools, the focus now shifts more specifically to practice with students with social, emotional and behavioural difficulties (SEBD). Occupational therapy has long provided services to persons with mental health issues and behavioural, social-emotional, and psycho-social needs (Chandler, 2007). However, Barnes et al (2003) found that while the vast majority of occupational therapists supported school based intervention for students
with emotional disturbance, they made up only 10% of their caseload, while 91% of therapists selected handwriting as the focus of intervention for these students (Barnes et al., 2003). More recent literature states that students with social, emotional and behavioural difficulties (SEBD) receive inadequate occupational therapy services and are at risk of limited participation or exclusion from school as an underserved population from an occupational therapy perspective (Marczuk et al., 2014). There is no shortage of evidence indicating that individuals with SEBD have poor outcomes both educationally and socially (Bradley et al., 2004, Forness, 2003, Landrum et al., 2003, Osher and Hanley, 1996). Marczuk et al. (2014) view the challenges of students with SEBD from the occupational justice and school connectedness perspective. They too advocate for an occupation centred approach in which students are afforded every opportunity to participate in the meaningful occupations of school that promote belonging and positively impacts well-being. They suggest a paradigm shift is required in occupational therapy practice in schools. This would involve moving away from the traditional view of therapists providing services to a single client or small group of students who have specific disabilities to instead developing school wide engagement programmes and skill building activities. Key to this paradigm shift would involve occupational therapists “philosophically approaching the issue of at-risk youth not only as a problem of occupational injustice but also as a problem of wider social justice and well-being” (p. 240). Person centred occupational therapy practice holds client well-being at its core (Law et al., 1996, Kielhofner, 2008). In Ireland, the Framework for Junior Cycle 2015 (DES, 2015a) provides for a new area of learning at junior cycle called ‘Wellbeing’. It will provide learning opportunities that enhance the physical, mental, emotional and social well-being of students, and will enable students to build life skills and develop a strong sense of connectedness to the school and to their community (NCCA, 2016).

3.6.6 The Student Experience

Understanding the client experience is central to occupational therapy practice. Students presenting with social emotional and behavioural difficulties in mainstream schools have a unique perspective on the world that is worth reporting. Jahnukainen (2001) gathered the perspectives of students who had attended special classes for pupils with emotional and behavioural difficulties within mainstream schools. The study found that teachers were the most important factor in determining the school experience of students, a finding confirmed also by Daniels et al. (2003). Students had poorer relationships generally with mainstream teachers in comparison to the special class teacher. Riley and Docking (2004)
shed further light on these findings as their study “unearthed the frustration and mistrust between disaffected students and their teachers” (p.168). The authors conclude that in times of stress some teachers resort to “humiliating students who present behaviour difficulties, exacerbating rather than reducing problems of disrespect and disaffection” (Riley and Docking, 2004, p.177). It is interesting to refer to the findings from studies of young people with SEBD in ‘alternative settings’ such as special schools, due to the reported importance of the teacher-student relationship in the student’s experience of their time there. Cooper (1995) describes a process of ‘re-signification’ by which students develop a more positive view of themselves as a result of interacting with adults who hold positive views about them and as a consequence of experiencing success. Alternative settings have also been found to provide students with SEBD with a heightening sense of ‘belonging’ (Macleod, 2005), a subject that will be explored further in the following section on student wellbeing.

Understanding and valuing the voice of the student is part the NBSS’s national practice and is reflected in a report of 662 students who received ‘Level 3’ support in the 2012/2013 academic year. The study sought to gather the students’ views about their experiences of Level 3 Support that year, whether they thought the intervention had helped them as well as the aspects of the intervention that they found the most useful or positive. Capturing the ‘student voice’ is recognised within the educational research literature (Cook-Sather, 2006; Kane & Chimwayange, 2014; Manefield, Collins, Moore, Mahar, & Warne, 2007) as critical in the process of school improvement as students are ‘expert witnesses’ of their learning experiences and are best placed to contribute to the knowledge bank that researchers draw from to inform developments in educational policy (Bahou, 2011; Bergmark, 2008). While students with SEBD are ‘…the least listened, empowered and liked group of students’ (Cefai & Cooper, 2010) (p.184), listening to this group is particularly important to develop their engagement with school and personalise their learning but also to contribute to their resiliency and self-esteem (Mohamed & Wheeler, 2001).

This NBSS ‘Student Voice’ study (NBSS, 2014) provides an insight into how students with SEBD receiving support through the ‘Behaviour for Learning Programme’ experienced that support and any perceived benefits it offered them. Students’ perspectives were gathered with an online survey using Survey Monkey with a mix of multiple choice and open ended questions. Six hundred and sixty-two questionnaires were completed representing a 72% response rate. The study found that only 54.8% of students reported that they liked being in their school with difficulties in terms of relationships with teachers and peers as well as
anger presenting as the main challenges. The majority (83.1%) reported that the work they had engaged in the ‘Behaviour for Learning Programme’ had helped them with most of the students (54.0%) describing how their school experience had improved in relation to Behaviour for Learning Skills and behaviour in general. The qualitative data contained references to the type of work that they found enjoyable and helpful, with self-regulation games and the ‘Alert Programme (along with additional work with the NBSS occupational therapists)’ (p.20) emerging as a theme. A number of students also wrote specifically about how things now were better for them in school because they felt more ‘content, calmer and happier’ (p.29). Sustaining the positive effects of interventions for young people with SEBD is always an issue to consider due to the multitude of factors from different environments impacting on young people’s emotional and behavioural functioning. Indeed, the NBSS study found that a considerable amount of students (27.9%) had concerns about their ability to continue the good work they had done and emphasised the need for on-going support to be available to students who had received ‘Level 3’ support. The study highlights the nature and extent of the issues and challenges faced by these students and emphasises that in many cases, students will benefit from some form of further assistance throughout the course of their school education. In concluding the findings of the voice of the ‘Level 3’ student, the report is mindful that the positive findings drawn from the data reflects progress as individual learners and does not necessarily translate into them feeling positive about their schools as a whole. ‘Through their work with the BfL teachers, generally they have been given tools to individually function more positively within the school. However, as a NBSS Level 3 intervention, this is an individual, unique development and is not associated with the whole school environment, systems, practices or change. Therefore, while recognising the significance of the progress they have made as individual learners, feelings about their school as a community and as an institution may be more complex than can be catered for in responding to a closed, multiple choice question’ (p.30). This is a pertinent reminder to practitioners in this area that supports and interventions implemented with this group of students must be done in the context of a wider view of the students’ learning experiences and environments to ensure that progress is not isolated to individualised programmes such as the Behaviour for Learning Programme.
3.7 Well-being

Well-being refers to a state of overall contentment with one’s physical/mental health, self-esteem, sense of belonging, personal and economic security and opportunities for self-determination and meaningful occupation (Hay et al., 1993, Wilcock et al., 1998). Due to the richness of this definition, the components of well-being will be explored below after research in Irish post primary schools is reported.

3.7.1 Well-being in Post Primary Schools in Ireland

The National Disability Survey analysed two key dimensions of student well-being - attendance at school and the nature of social and peer participation. While absenteeism has long been recognised as a threat to educational progress, social participation has more recently emerged as an important influence on school engagement (McCoy and Banks, 2012). A report from the National Council for Curriculum and Assessment concluded that schooling should be concerned with a broad conception of the well-being of a young person (O’Brien, 2008). The report also states that the academic component of education is only as important as emotional and mental health to general well-being, both in terms of subjective well-being and broader understanding of happiness. The author also argues that if happiness is an appropriate aim of education, a recalibration of the balance between competing aims, preparing students for the labour market and higher education and educating students for a good life will have to occur.

3.7.2 Self-esteem

Self-esteem and self-efficacy are important aspects of well-being in education. O’Brien (2008) differentiates between the two. She states that the traditional view of self-esteem is that it involves having a positive evaluation of the self but this viewpoint has connotations of egotistical behaviour and devaluing of others in order to improve one’s own perception of self. Alternatively, she offers Bandura’s (1997) definition of self-efficacy as an individual’s confidence in their ability to organise a given course of action, to solve a problem or to accomplish a task. Proponents of the concept of self-efficacy emphasise its differences from self-esteem. A major factor and one very pertinent to occupational therapy practice is around the emphasis on the capacity to do. There are a number of important consequences of self-efficacy. The most relevant to this study however is related to the selection of challenging activities. If someone feels that a new and potentially difficult task is beyond what they can do (low self-efficacy), they will not try, because avoidance
prevents the frustration or embarrassment to self (O’Brien, 2008). This in turn results in restriction in the range of activities that people will try. This is important in the context of the ‘just right challenge’ as documented earlier where the task is pitched at the appropriate level for the individual and consequently stimulates feelings of mastery and a sense of oneself as a competent being (Parham and Mailloux, 2010). From a school based occupational therapy perspective, MacCobb et al (2014) describe how therapists plan and act with students as self-efficacy builders. The demands of tasks are carefully graded so as to support participation by students with multiple learning challenges. Interventions are planned to ensure that students experience success and avoid placing students in situations prematurely where they are likely to fail on a regular basis. Finally, strategies to shown to enhance self-efficacy are mastery experience, role modelling, persuasion and reinterpretation of physiological and affective state (Bandura, 1988).

3.7.3 Belonging

The reference to a sense of belonging in the definition of wellbeing is especially relevant to the occupational therapy profession. Maslow (1970) attributes great importance to belongingness as it is included in his famous ‘hierarchy of needs’. He believed that any unmet needs were a source of motivation. Mosey (1973) also includes acceptance and group association in his/her ‘health needs’ hierarchy. The author believes that a “need satisfying environment” is at the core of any intervention as the client is usually unable to meet their own health needs (Mosey, 1973). It is clear from these two major theorists that a sense of belonging and acceptance is vital to an individual’s health and achievement of self-actualisation. Occupational therapists are well placed to achieve this sense of belonging for individuals as they recognise the power of enabling occupation in social groups to promote human doing, being and becoming – and particularly belonging (Barret, 2009). This theme of belonging is found in the conclusion of the NCCA report on wellbeing in schools as it states that it is not just the content of curricula and subjects that are significant to well-being in school. It is clear that a sense of belonging and good relationships within the school community foster feelings of well-being (O’Brien, 2008).

Barret (2009) made reference to doing, being and becoming. In combination, these three concepts are integral to occupational therapy philosophy, process and outcomes because, together, they epitomise occupation (Wilcock, 1999). This theory is particularly relevant to NBSS occupational therapy practice as becoming through doing and being is part of daily life for all people on earth not just those in hospital or health centre (Wilcock, 1999).
3.7.4 Self Determination

Self-determination can be defined as a combination of skills, knowledge, attitudes and behaviours that enable a person to engage in goal directed, self-regulated autonomous behaviour (Field et al., 1998). Becoming a ‘causal agent’ in one’s own life is considered critical to the development of self-determination and involves taking responsibility for one’s action and seeing opportunities for learning (Wehmeyer and Palmer, 2000). Self-determination can develop through engagement in specific contextually based learning experiences in home, school and community settings (Dunn and Thrall, 2012). The same author explains that programmes that foster self-determination requires supports from the child’s environment including teachers and therapists and that physical and social supports are critical aspects of interventions that promote generalisation of self-determination to other settings. This, in conjunction with our knowledge of self-efficacy and mastery experience as already documented creates an encouraging picture of the potential to influence the lives of students experiencing learning and/or behavioural difficulties in schools through meaningful occupation. As is noted in the literature, through occupations people can develop a mastering and enabling experience that builds a base for self-determination and autonomy (Hemmingsson and Jonsson, 2005).

The work of Ryan and Deci (2000) with regard to Self Determination Theory (SDT) is important to note here also as it refers to concepts that are particularly relevant to the occupational therapy programmes outlined in this study and to students’ overall experience of well-being. The authors propose that ‘human beings can be proactive and engaged or, alternatively, passive and alienated, largely as a function of the social conditions in which they develop and function’ (p.68). Just as human being require basic physiological needs to survive and thrive, Deci and Ryan (2000) identify three innate psychological needs that are the basis for self-motivation and personality integration and are essential for constructive social development and personal well-being. These are the needs for competence, relatedness and autonomy. These three factors play an important role in the maintenance of ‘intrinsic human motivation’ described by Ryan and Deci (2000) as the ‘inherent tendency to seek out novelty and challenges, to extend and exercise one’s capacities, to explore, and to learn’ (p.70). It is considered to be an evolved propensity rather than a developed attribute. However, the authors contend that the environments in which humans play, work and learn can elicit and sustain intrinsic motivation or alternatively subdue and diminish it to the detriment of the person’s performance in their primary life occupation at that time such as school. Cognitive evaluation theory (CET) was
presented by Deci and Ryan (1985) as a sub theory within self-determination theory that aimed to specify factors that explain differences in intrinsic motivation. CET focuses on the fundamental needs for competence and autonomy to elicit and sustain intrinsic motivation. The theory proposes that ‘social-contextual events (e.g. feedback, communications, rewards) that conduce toward feelings of competence during action can enhance intrinsic motivation for that action’ (p.70). In addition, CET specifies that feelings of competence will not enhance intrinsic motivation unless accompanied by a sense of autonomy or, by an internal perceived locus of causality (deCharms, 1968). Research related to the effects of environmental events on intrinsic motivation has focused more on the subject of autonomy versus control rather than competence. This is particularly interesting to review keeping in mind the cohort of students participating in this study who are receiving support due to their poor engagement with learning and frequent low motivation for school based occupations. Although the issue of reward effects has been debated widely in the literature, a comprehensive meta-analysis (Deci, Koestner, & Ryan, 1999), indicated that all expected tangible rewards made contingent on task performance do reliably undermine intrinsic motivation. Interestingly and with relevance to professionals working in schools, choice, acknowledgment of feelings and opportunities for self-direction were found to enhance intrinsic motivation because they allow people a greater feeling of autonomy (Deci and Ryan, 1985). Studies in educational settings have shown that teachers who are autonomy supportive (as opposed to controlling) promote greater intrinsic motivation, curiosity, and desire for challenge in their students (Deci, Nezlek, & Sheinman, 1981; Flink, Boggiano, & Barrett, 1990; Ryan & Grolnick, 1986). In contrast, students taught with a more controlling approach lose initiative and learn less effectively, especially when learning requires conceptual and/or creative processing (Amabile, 1996; Grolnick & Ryan, 1987; Utman, 1997). Finally, the third psychological need proposed, relatedness, also has a role to play in supporting intrinsic motivation. Just as secure mother-child attachments and maternal autonomy promote more exploratory behaviours in infants, a similar dynamic occurs in interpersonal settings over the life span, with intrinsic motivation more likely to flourish in contexts characterized by a sense of security and relatedness (Anderson, Manoogian & Reznick, 1976). Interestingly, Ryan and Grolnick (1986) observed lower intrinsic motivation in students who experienced their teacher to be cold and uncaring. However, it is important to note that proximal relational supports are not essential for intrinsic motivation to be evidenced but rather a secure relational base appears to be important for the expression of intrinsic motivation. It is worth recalling the literature reported earlier in relation to attachment relationships in light of this reference to relational
bases with a higher number of children from socio-economically deprived households found to have more complex attachment patterns with potential ramifications for intrinsic motivation and consequently self-determination.

In summary, the work of Ryan and Deci (2000) suggests that social environments can facilitate or predict intrinsic motivation by supporting or undermining people’s innate psychological needs. They maintain that by failing to provide supports for competence, autonomy, and relatedness of children and students, schools can be contributing to the alienation and ill-being of those in their care. As psychological-need deprivation appears to be a principal source of human distress, Deci and Ryan (2000) propose that ‘interventions would do well to target these primary foundations of mental health’ (p.74), a recommendation that has relevance to the occupational therapy programmes under study here. The protected space of the Behaviour for Learning classroom offers the opportunity to create a social environment that keeps autonomy, competence and relatedness at the core of its practice.

3.7.5 Well-being and Meaningful Occupation

The link between well-being and occupational engagement is evident in the literature. In her paper, Whaley-Hammel (2007) links participation and well-being to quality of life and posits that this should be the focus of all occupational therapists in their practice (Whalley Hammell, 2007). This theme is developed further with the occupational well-being framework proposed by (Doble and Caron Santha, 2008). The authors contend that occupational therapists should re-think the focus on measuring occupational performance outcomes and consider the importance of individual’s subjective occupational experiences (Doble and Caron Santha, 2008). Their paper draws on what they describe as the ‘five critical issues’ in occupational therapy literature that has informed the development of the occupational well-being framework.

1. Participation.
2. Doing, Being, Becoming.
3. Orchestration of occupations.
5. Meaning.

The authors propose that “individuals’ subjective experiences of their occupational lives are an important occupational therapy outcome” (pp. 186), and that individuals are more
likely to experience occupational well-being when they choose and engage in occupations that consistently meet their ‘occupational needs’. The seven occupational needs referred to by the authors are accomplishment, affirmation, agency, coherence, companionship, pleasure and renewal.

There are a number of influencing factors that affect an individual’s ability to arrange their occupational lives to consistently meet these occupational needs. Personal and environmental dynamics will impact on achieving occupational needs be it as a result of injury/illness or change in a person’s social, cultural, political, economic or physical environment. The availability of occupational opportunities is another factor that can threaten individuals’ success in meeting occupational needs particularly if occupational choices are limited. Finally, the authors identify a person’s ability to orchestrate their occupational lives in ways that promote the meeting of occupational needs is highly influential on occupational well-being. The paper concludes that “by working in collaboration with clients or advocating on their behalf, occupational therapists can ensure that clients have access to occupations that have the potential to meet their occupational needs” (pp. 189).

Having summarised occupational therapy practice in school settings and with students with SEBD, it has been established that both the occupational therapy and teaching profession share a vision for the enhancement of student well-being as core parts of practice as reflected in the occupational therapy literature and the Irish post primary junior cycle curriculum.

3.8 Summary of Part One

Part One of the Literature Review has reported some of the most relevant existing knowledge related to the practice setting. Part Two that follows explores the clinical reasoning processes that occupational therapists employ in practice and how this knowledge can be captured.
3.9 Part Two

3.10 Clinical Reasoning

The purpose statement of this thesis refers to understanding the process of practice development in an emerging context for occupational therapy by focusing on a recently developed programme, ‘Movement Matters’. This aim is informed by three objectives, one of which is to map the clinical reasoning process of the occupational therapists who developed and observed the programme in use. Clinical reasoning is at the core of this study and will be reviewed in the following sections.

3.10.1 Definition

The term ‘clinical reasoning’ is more associated with those working within a medically based approach and is defined as the process used by practitioners to plan, direct, perform and reflect on care (Boyt Schell, 2003). Boyt Schell and Schell (2008) propose that ‘professional reasoning’ is more appropriate when discussing reasoning that occurs in non-medical environments, such as schools and community settings, as well as reasoning done by supervisors, fieldwork educators and occupational therapy managers as they conceptualise occupational therapy practice. For the purpose of this study, clinical reasoning will be the term used due to its wide use in the occupational therapy literature.

Unsworth (2011) suggests that a definition of clinical reasoning is not easily reached due to its complexity as a construct. She makes reference to the point made by Boyt Schell and Schell (2008) that it can be referred to by a number of different names depending on the setting therapy is occurring in, or the perspective from which a piece of literature is being written. In addition, she raises a second issue with regard to the “intertwined nature of clinical reasoning and clinical decision making” (p.210). Harries and Duncan (2009) drew on material from cognitive psychology (cognitive continuum theory (Hammond and Brehmer, 1973) and dual processing theory (Stanovich and West, 2000) to demonstrate that our thinking systems are neurologically different, with one focusing on the ‘art’ of clinical reasoning and the other on the ‘science’ of decision making. Harries and Duncan (2009) also observed that in occupational therapy publications, the term clinical reasoning was used to cover all thinking processes that involve reasoning, problem solving, judgment and decision making. Unsworth (2011) concludes her critique of the literature by offering the following definition. “In occupational therapy, clinical reasoning can be defined as the
reflexive thinking associated with engaging in a client centred professional practice” (p.211).

3.10.2 Problem Solving

Roberston and Griffiths (2012) propose that at the heart of clinical reasoning and occupational therapy practice in general lies the process of problem solving. Meyer refers to this problem solving ethos stating; “Since the early days of occupational therapy, the focus of the therapeutic process has been to assist individuals with the problems of living” (Meyer, 1992, p.4). Robertson & Griffiths (2012) suggest that there is a reluctance amongst occupational therapists to describe problem solving as central to their reasoning due to the ‘fashion’ of strengths based approaches within the profession currently. The authors believe that there are valuable gains to be made by considering the problem solving framework more seriously. Roberston (1996) proposed two stages of problem solving; identifying the problem and providing solutions.

The first stage (problem identification) is regarded as being pivotal to problem solving processes because it provides the direction for ongoing planning and implementation of solutions (Roberston and Griffiths, 2012). It regarded as a cognitive process involving short and long term memory and is influenced by personal experiences and assumptions (Hooper, 2008). It is a key stage as until there is a problem identified, there is no apparent way to identify relevant goals. The focus at this stage is on performance components affecting performance which can, according to the authors, distract the therapist from the problem related specifically to the occupational concerns (Roberston and Griffiths, 2012).

While the first stage of problem solving relates to goal identification, the second addresses the means of getting to the goal and involves the implementation of plans. This involves a great deal of technical skill according to the authors as it requires the therapist to recognise when their interventions are not working and be flexible and client centred at all times. They refer to Mattingly (1994) who supports this flexibility of practice by stating that “effective therapy depends as much on the capacity to modify plans and to rethink treatment goals as it does on the capacity to create plans and goals in the first place” (p.271). Reference is made to the importance of stage one and its effect on reasoning during the implementation phase as the effectiveness of the reasoning is dependent on the clarity with which the first stage is defined’ (Mattingly, 1994). Robertson & Griffiths (2012) highlight the lack of research that explores the problem solving process and the processing of cognitive information that occurs during practice. They concur with Boyt
Schell et al. (2008) that it would be timely to use a problem solving framework to further understand its applicability in occupational therapy practice.

3.10.3 A Cognitive Process

Clinical reasoning is a cognitive process involving the processing of information through the use of short and long term memory systems (Carr and Shotwell, 2008). Short term memory, also known as working memory mediates our perceptions of the world with our memory or knowledge of the world. Its purpose is to process, not store information and enables us to make sense of the incoming information and reflect on what we have experienced. It is the system that enables a therapist to recognise if an intervention is not working and to change to an alternative method. Long-term memory on the other hand is considered a storage system for both declarative and procedural knowledge (Anderson, 1983). Declarative knowledge is what we know through the assimilation of scientific information and what helps understand a client’s diagnosis and prognosis while procedural knowledge is the ability of a therapist to conduct various interventions and assessments. Our ability to learn and respond to our experiences is determined to a large degree by the way these two systems work together to coordinate what we are experiencing with what we know (Carr and Shotwell, 2008). The processes outlined above refers to how therapists “think about thinking” as described by Boyt Schell (2014). This meta-cognitive analysis enables practitioners plan, direct, perform and reflect on client engagement in order to achieve meaningful outcomes.

3.10.4 Modes of Reasoning

Fleming (1991) who was the first within occupational therapy to describe how occupational therapists seemed to use different thinking approaches, depending on the nature of the clinical problem they were addressing (Boyt Schell, 2014). The study identified two bodies of practice within occupational therapy; the phenomenological vs the biomechanical approach to working with clients as well as the development of a language for clinical reasoning including procedural, interactive, and conditional reasoning. An explanation of each mode of thinking can be seen in Table 2 below.
Table 2. The Modes of Clinical Reasoning identified by Mattingly (1994) and Fleming (1991).

<table>
<thead>
<tr>
<th>Narrative Reasoning</th>
<th>Procedural Reasoning</th>
<th>Interactive Reasoning</th>
<th>Conditional Reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of storytelling and creation to explore therapy.</td>
<td>The thinking associated with the procedural aspects of therapy such as evaluations and interventions and client progress.</td>
<td>Concerned with therapist-client interactions.</td>
<td>Consideration of the client's temporal context (past, present &amp; future).</td>
</tr>
<tr>
<td>Emphasis on the meaning of the client's illness and illness experience.</td>
<td>Represents the more scientific components of practice.</td>
<td>Used to engage the client in therapy.</td>
<td>Consideration of the clients personal, cultural &amp; social contexts.</td>
</tr>
<tr>
<td></td>
<td>Systematic data collection, hypothesis formation and testing.</td>
<td>Used to select the best communication approach with clients.</td>
<td>Used to understand what is meaningful to the client.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used to understand the client as a person and their problems from their perspective.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Used to monitor progress of the treatment sessions.</td>
<td></td>
</tr>
</tbody>
</table>

In addition to the modes identified by Mattingly (1994) and Fleming (1991), additional approaches have been documented by other authors. One of these most relevant to the NBSS post primary school practice setting is pragmatic reasoning (Schell and Cervero, 1993). It is concerned with the therapists practice and personal contexts, taking into consideration organisational issues, political environments and economic influences such as resources and reimbursement. Personal context includes the reasoning surrounding the therapists own motivation, negotiation skills, repertoire of therapy skills, ability to read the practice culture and life knowledge and assumptions (Unsworth, 2011).

3.11 Scholarship of Practice

One of the most influential studies of clinical reasoning according to Kielhofner (2006), was conducted by Mattingly and Flemming (1994). Their study identified different types/tracks of reasoning that characterized occupational therapy practice and has served as a framework for understanding how occupational therapists make sense of and take action with reference to their clients’ problems and challenges in therapy. The idea of the therapist with the three track mind was developed subsequently to describe how the reasoning in one track might inform the reasoning in another. The study was particularly relevant as it documented practical theories in use in the profession that could educate other practitioners (Unsworth, 2011). Data for this project was gathered through a research process called ‘scholarship of practice’ (Schön, 1983) which is the process of “delivering
and generating evidence for practice through a partnership between academia and practice” (Melton et al., 2009, p.13). This research style differed from its predecessors as the therapists were not studied from a distance but rather became part of the research team as they examined their own practice. The scholarship of practice approach has been identified as a way of growing relevant theory from within practice, to support and promote that practice (Schön, 1983, Argyris and Schön, 1974, Creek and Ormston, 1996).

3.11.1 Key Elements

The following key elements of a scholarship of practice have been identified (Hammel et al., 2002). The authors advocate for;

a) Conducting research that directly responds to and contributes to practice.

b) Linking with individuals and organisations outside of the academic department to develop new educational practice and research opportunities.

c) The development of synergies to advance practice and scholarship simultaneously.

Adopting this approach assumes that those who will ultimately use the knowledge must be central in its generation (Kielhofner, 2005b). The author adds that this knowledge generation must be as a result of true collaboration and partnership between academics and practitioners where power is shared and the ‘everyday worlds’ of both partners are represented.

3.11.2 Knowledge Generation

The method in which this knowledge is generated is also important. Kielhofner (2005a) emphasises the value of striking the balance in participatory research that promotes both theory and practice as “there is a tendency to emphasise the importance of empowerment and solving local problems while deemphasising traditional research aims of creating generalizable theory and empirical findings” (p.234). The ‘knowledge creating system’ was proposed by Senge and Sharmer (2001) and appears to strike the right balance according to Kielhofner (2005a). It is a community of researchers and practitioners working together as part of a “continuing cycle of creating theory tools and practical know how” (Senge and Sharmer, 2001, p.238). There are three interacting domains of activity in constant flow in the system as illustrated in Figure 7 overleaf.
The traditional divide between creating and assessing knowledge on the one hand and applying on the other is eliminated in this knowledge creating system (Kielhofner, 2005b, Kielhofner, 2005a). In conclusion, the various literature on this subject is summarised by Kielhofner (2005b) when he reports that “knowledge development best occurs when:

- Those who ultimately will use the knowledge should be involved in helping to generate and refine it.
- Knowledge generation should be grounded in the kinds of contexts in which it is designed for application.
- Knowledge generation should emerge from cooperation and teamwork between those whose primary roles involve application of knowledge.
- The desire to generate generalizable knowledge is balanced with the desire to create local problem solutions and technical know-how” (p. 13).

3.11.3 Bridging the Academic-Practice Gap

Kielhofner (2005b), Kielhofner (2005a) placed great importance in scholarship of practice as a method of ‘bridging the divide’ between academics and practitioners. He attributes the divide to the concerns of academics that practice lags behind scholarship while
clinicians bemoan the irrelevance of theory and research to their everyday work. The two biggest barriers to effective linking of scholarship and practice are the disparities between where knowledge is generated and where it is used (universities versus clinical/practice settings) and by how knowledge is judged by the different stakeholders. For academics, knowledge is judged by rigour and method and ultimately publications whereas practitioners and clinicians judge knowledge by what it allows them to do and the practical results it generates.

3.11.4 Future Directions

Unsworth (2011) conducted a review of empirical research on clinical reasoning in occupational therapy. In order to adhere to evidence based practice, the profession “urgently needs more empirical studies on clinical reasoning, so we are confident that we are judicious in putting the best evidence into practice” (p.218). She qualifies this statement by explaining how decision making, thinking and reasoning are at the heart of putting evidence into practice. In terms of future research in this area, an approach following the scholarship of practice method is recommended (Unsworth, 2011). The same author highlights the need for further longitudinal studies of clinical reasoning that track therapists reasoning and importantly shifts in reasoning over time.

3.11.5 Practice Development

Scholarship of practice has been identified in the occupational therapy literature as a method to support the development of practice (Folland, 2011). Practice development is a continuous process of developing practitioner-centred cultures. It is enabled by facilitators who authentically engage with individuals and teams to blend personal qualities and creative imagination with practice skills and practice wisdom. The learning that occurs brings about transformation of individual and team practices. This is sustained by embedding both processes and outcomes in service strategy (Manly, McCormack & Wilson, 2008). Folland (2011) identifies professional support networks called ‘communities of practice’ as important in the practice development process in order to develop collective visions and shared processes amongst occupational therapists. Providing these practice development support structures under experienced leadership enables occupational therapists to develop their practice within services and organisations (Folland, 2011).
3.12 Research Paradigms in Knowledge Generation

The literature on scholarship of practice and clinical reasoning refers frequently to ‘knowledge generation’ and ‘evidence based practice’. The nature of knowledge and what best constitutes evidence have been topical subjects within the health care professions including occupational therapy over the past two decades. Strong views are held about the nature of evidence due to its potential use and misuse in guiding clinician’s practice (Duncan and Nicol, 2004). Health and social care professions like occupational therapy rely on a knowledge base to inform practice. This ‘knowledge’ is established through scientific inquiry and theory development (Galle and Whitcombe, 2006). This scientific inquiry can involve various research approaches and the generation of knowledge depends largely on the ‘paradigm’ adopted.

3.12.1 Positivist and Post-Positivist Views

The two dominant paradigms in research are the positivistic and post-positivistic world views (Duncan and Nicol, 2004). The positivistic paradigm adopts a reductionist view of the world where all phenomena can be counted, measured and understood. Post-positivism is rooted in a more holistic perspective and states that an absolute reality can never be understood but rather only approximated (Denzin and Lincoln, 2000). Qualitative research is more aligned in post-positivism, which focuses on the process, qualities and meanings of events, while quantitative research, which emphasises the analysis of causal relationships between variables and measurement is grounded in the positivistic paradigm (Duncan and Nicol, 2004).

Occupational therapy adheres to a holistic and client centred philosophy (Finlay, 1997). Generating knowledge and developing theory within the profession by applying purely scientific positivist principles would seem to run contrary to its philosophical stance. Galle and Whitcombe (2006) suggest that it is important that the generation of knowledge that affects what practitioners do is congruent with the profession’s beliefs. This would suggest that a profession like occupational therapy should be aligned with the post-positivistic paradigm alone. However, other theorists have found even the qualitative methods of post-positivism restrictive and ignorant of other perspectives.

Alternative approaches to research are required that propose multiple constructed realities because different people experience the world in differing ways (Lincoln and Guba, 2000). Anti-positivist paradigms such as constructivism, interpretivism and critical theory have
been offered as such alternatives with Duncan and Nicol (2004) proposing the combinist perspective of Miller & Crabtree (2000) as the most suitable to occupational therapy research. This combinist approach, incorporating both quantitative and qualitative methods is more recently being seen to address the complex, multiple realities of research in health care settings traditionally considered a positivist, biomedical domain (Pope and Mays, 2000). Miller and Crabtree (2000) when referring to research in the health care environment emphasises the importance of “seeing with three eyes – the biomedical eye, the inward searching eye of reflexivity, and a third eye that looks for the multiple nested contexts that hold and shape the research question” (p.611). This ‘reflexivity’ refers to the method in which practice knowledge is generated. Professional artistry is demonstrated by skilled practitioners when facing the unique, uncertain and conflicted situations of practice. This tacit knowledge of practice is difficult to bring to the surface and convey to others but “by careful reflection, practice will develop” (Galle and Whitcombe, 2006, p.190).

Finally, Duncan and Nicol (2004) present ‘subtle realism’ (Kirk and Miller, 1986, Hammersley, 1992) as an important epistemological perspective that offers a useful alternative perspective on the nature of knowledge for research within the occupational therapy profession. This approach states that all research involves subjective perceptions and observations and that different methods will produce different pictures of the participants being studied. The subtle realist contends that there is no manner in which the researcher can claim absolute certainty regarding research findings. Rather, “the objective should be the search for knowledge about which we can be reasonably confident. Such confidence will be based upon judgements about the credibility and plausibility of knowledge claims” (Murphy et al., 1998, p.69). Galle and Whitcombe (2006) reviewed ways of knowing employed within occupational therapy and found that knowledge was generated from the positivistic and post-positivistic paradigms, through practice knowledge and evidence based practice.

3.12.2 Evidence Based Practice

Galle and Whitcombe (2006) identified ‘evidence based practice’ as one of the main ways of knowing within occupational therapy. Evidence based practice is a widely used term in the health and social care professions. It is the “the process of systematically finding, appraising and using contemporaneous research findings as the basis for clinical decisions” (Rosenberg and Donald, 1995, p.1122). These clinical decisions should be made by “those receiving care, informed by the tacit and explicit knowledge of those providing care, within the context of available resources” (Dawes et al., 2005, p.4).
The foundation of the evidence based practice paradigm rests on efficacy research which in turn rests within a natural sciences paradigm (Peterson, 1991). Efficacy research aims to examine whether a particular intervention has a specific, measurable effect (Barkham and Mellor-Clark, 2003). Central to an efficacy study is the randomised control trial (RCT) and its components of randomisation, manualised treatment, controlled conditions and specific inclusion and exclusion criteria. The randomised control trial has long been considered the ‘gold standard’ in research and sits on top of the hierarchy of evidence (Gray, 1997, Long and Harrison, 1995). Major developments in medicine owe their knowledge base to the rigorous scepticism in this type of scientific method (Brechin and Sidell, 2000).

From an occupational therapy perspective, there is a mixture of attitudes towards evidence based practice evident in the literature. Lloyd-Smith (1997) refers to the profession needing to justify interventions and demonstrate “clinical effectiveness” (p.474). While the author recognises the importance of clinical expertise in professional reasoning and qualitative methodologies within health care research, he questions why randomised control trials are not used more widely to “elevate” occupational therapy. He concludes that evidence based practice may encourage therapists to incorporate robust evidence of effectiveness into their interventions. Bannigan and Birleson (2007) strongly advocate for the strict adherence to evidence based practice principles in occupational therapy practice. They propose “ten commandments” to aid therapists in becoming “evidence based practitioners”, one of which is to “avoid implementing novel ideas without convincing evidence (use grades/hierarchy of evidence)” (p.347). The authors also refer to the dangers of ‘evidence tinged practice’ as described by Pomeroy and Tallis (2003), which involves using research findings to change practice when the evidence is relatively slender. Other authors however are more cautious about evidence based practice alone guiding occupational therapy practice. Bennett and Bennett (2000) recognise the need to integrate best evidence into clinical decision making as health care moves to become more evidence based. They propose a framework where the client and context of therapy are central to the evidence based practice process and the integration of research evidence, information from clients, and clinicians’ experience are essential to sound clinical decision making.

Hyde (2004) reports on the limitations of the RCT in health care research as the client centred interventions that are central to occupational therapy practice are often not reproducible in the form of the prescriptive protocols required for experimental research. Upshur et al. (2001) proposed that evidence based approaches must be equally
concerned with meaning and offer a more inclusive, holistic model incorporating both qualitative and quantitative evidence from general and individual perspectives. Titchen and Higgs (2001) suggests that the narrow view of evidence based practice in which research evidence is the only evidence that counts is an obstacle that must be overcome. This perspective concurs with the view that the challenge is to find the most relevant evidence rather than the highest level of evidence (Taylor and Savin-Baden, 2001). It is not only in the occupational therapy literature where reservations regarding adherence to evidence based practice are expressed. Literature from psychology, social work, physical therapy and epidemiology journals all pose questions of the evidence based practice model and refer to a disconnect between academia and practice.

3.12.3 The Academic-Practice Gap: Research Perspectives

Fox (2003) refers to ‘academic encirclement’ as a cause for the disconnect. Authoritarianism towards practitioners exists where they are instructed what the best evidence for practice is without involving the practitioner in its generation. Green (2008) suggests that the blame for the gap between science and practice is shared. He refers to the “stubbornness of practitioners insisting on doing it their way and the smugness of scientists believing that if they publish it, practitioners will use it” (p.20). Fox (2003) on the other hand argues that the fault lies in neither researcher nor practitioners but rather in the model of research which has been developed in academia.

Green (2008) also refers to the model in which practitioners receive research findings and finds it to be fundamentally flawed. The author uses a ‘pipeline’ conceptualisation to communicate the process of transferring research to practice. Much of the original research ‘leaks’ out on the way to the practitioners as best practice guidelines are developed based on literature that adhere to the highest levels of evidence which produce results and findings relevant to a specific population in controlled settings rather than typical populations and settings. What emerges at the end of the pipeline for practitioners is evidence based practice with an overemphasis on internal validity and neglect of external validity. One source indicates that it takes 17 years to turn 14 percent of original research to the benefit of patient care (Balas et al., 2000). This narrow representation of research conducted results in rich, pertinent practice knowledge being lost during the screening process.

The pipeline approach also fails the practitioner in that it discourages researchers to publish ‘negative’ findings as it is assumed that they are unpublishable. Negative results
can be helpful for practitioners as they can understand why the intervention was a misfit with the client and/or context. The disconnect between what academics believe to be significant and what practitioners deem important is summarised by Haines and Jones (1994) who report that research and practice need to be seen as differing world views on the same subject matter: researchers see data while practitioners see people.

3.12.4 Practice Based Evidence

Fox (2003) recommends that ‘evidence based practice’ should be supplemented by ‘practice based evidence’. The concept of practice based evidence recognises that real world clinical practice is complicated, messy and not conducive to the controls required by the highest levels of evidence such as RCTs (Swisher, 2010). It respects that people are complex, and don’t readily fit the cause and effect model of science. This real world practice is documented, measured and studied to determine how practitioners affect client outcomes. Galle and Whitcombe (2006) distinguish between evidence based practice and practice based evidence by describing it as ‘knowing that’ versus ‘knowing how’.

3.12.5 Practice Based Research Approaches

A number of models stemming from the practice based evidence approach are outlined in the literature as an alternative to the dominant evidence based practice method. Fox (2003) proposes the ‘Practice-Based Research’ (PBR) model which is influenced by transgressive action research and post structuralism. Action research is implicitly linked to practice and is underpinned by the principle that theory would be developed and tested by practical interventions and actions. Its focus is changing practice and testing new forms of practice and related theory. Action research is a developmental process in which practice is a form of research and research is a form of practice (Elliott, 1995). Post structuralism rejects grand narratives that offer a unified perspective on the world or knowledge in general and does not believe that absolute truth about the world can be established.

The PBR model (Fox, 2003) recommends three propositions concerning how knowledge of the world should be sought.

1. The pursuit of knowledge must be recognised as a local and contingent process meaning that assumptions cannot be made regarding the transferability of research findings to other settings.
2. Research as a political activity should be constitutive of difference, rather than demonstrative of similarity. This avoids pigeonholing phenomena into categories and acknowledges findings different qualities and accepts them as of equal value rather than privileged in hierarchical and oppositional relationships to each other. This means that research avoids legitimising or repressing certain aspects of the world it is observing such as the mess and unpredictability of practice.

3. Theory building is a necessary part of any activity of understanding but should not be seen as an end in itself but as an adjunct to practical activity within the setting in question. Meta narratives and global theorising can deny difference and suggest absolute certainty about research findings.

PBR differs from the traditional 'scientific method' and can be seen across four main stages of the research process.

1. Setting a Research Question
   The research question may not emerge until the setting or context is fully understood as setting a question too early can limit the scope/understanding of a research subject.

2. Research Design, Study/Instrument Validity
   The setting must be fully explored before the design is chosen. Internal and external validity are more valuable as indicators of adherence to practice based research principles rather than ends in themselves.

3. Data Collection and Reliability
   Traditional reliability and bias concerns are seen as strengths within the practice based research framework as research questions and findings are guaranteed to be relevant to the local contingent.

4. Data Analysis and Hypothesis Testing
   Data analysis is an ongoing process of evaluation and reflection and includes recommendations for practice. It is impossible to fully understand data if the context is ignored.

While the PBR model is intended as a trenchant criticism of the traditional research practice due to its problem translating findings into practice, the intention is not to create another model of the 'best' way to research. Rather, the PBR model is one way of assuring that “findings are seen as useful and relevant by overcoming traditional oppositions between researcher and researched, research and experience and theory and practice in
each of which the first is the privileged term" (Fox, 2003, p.96). If PBR adheres to its transgressive roots, it would not advocate itself as the one single truth of how research should be done but reminds the reader that “reflexivity about practice requires that one is always open to new ways of thinking” (p.97).

Barkham and Mellor-Clark (2003) concur with Fox (2003) and argue in their paper that no single paradigm can deliver all requirements of rigorous and relevant research. Practitioners and researchers must value multiple paradigms to provide a robust knowledge base. Four key domains of research activity are outlined.

1. Efficacy research (grounded in the evidence based practice) and aims to measure an intervention’s ‘effect’.
2. Effectiveness research (grounded in practice based evidence) which aims to determine whether ‘efficacious treatments’ identified through efficacy research have a measurable, beneficial impact when implemented across broad populations and other settings.
3. Practice research (grounded in practice based evidence) examines how treatments/services are provided to individuals within service systems and evaluates how to improve that service or treatment. Its aim is not to generalise effects but rather examine variations and ways to implement research based treatments.
4. Service systems research addresses large scale organisational, financing and policy questions.

As noted above, effectiveness and practice studies are derived from the practice based evidence paradigm. These studies have high external validity as they sample therapy as it occurs in routine practice. Internal validity is reduced dramatically if reasons for a particular result are offered.

An infrastructure is required in order to achieve robust sample sizes compared to efficacy research. These large data sets were developed in the form of practice research networks (PRNSs). A PRN is a network of clinicians that collaborate to conduct research to inform their day to day practice (Audi et al., 2001). PRNs gather real world data from the practice context as opposed to orchestrated clinical trials with the aim of delivering clinically meaningful and scientifically rigorous effectiveness research (Borkovec et al., 2001). PRNs are linked with academic institutions to keep up to date with the most recent research developments which binds together the activities of practice and research.
A key role of practice based evidence is practice improvement. The practice based evidence paradigm is most effective at whole services level as it acts as a driver for service planning and delivery, enhances therapist’s reflection on practice and promotes practitioner ownership of research. Barkham and Mellor-Clark (2003) warns of the dangers of putting paradigms in competition with each or making them mutually exclusive. The authors advocate for the merits of both approaches and propose a ‘cyclical model’ which combines the “rigours of evidence based practice and the relevance of practice based evidence” (p.323).

This cyclical model is a response to the traditional linear models of research paradigms in which each approach sits along a continuum in which a research subject is first tested under one condition and then under another. The usual direction of research is from efficacy to effectiveness. A key principle of the cyclical model proposed by Barkham and Mellor-Clark (2003) is that each component is equally valued which has important implications for the relationship between policy, practice and research. RCTs traditionally inform policy which consequently directs practice. The cyclical model complements this approach by practitioners developing and building an evidence base rooted in practice. This evidence base can feed into and inform issues that can be shaped into more finely tuned tests of specific hypotheses through efficacy research.

The products of both these evidence bases can better inform policy because in the cyclical model, policy is not the driver for practice, it is a “product of knowledge informed by a combined evidence base” (p.323). The authors insists that policy needs to derive from the discipline of applied academia which yields products that are both rigorous and relevant (Barkham and Mellor-Clark, 2003).

Horn and Gassaway (2007) reviewed the practice based evidence approach in medicine and compared its features, advantages and disadvantages to those of RCTs and sophisticated statistical methods for comparative effectiveness research. Twenty practice based evidence for clinical practice improvement (PBE-CPI) studies were examined. The PBE-CPI method was found to uncover better practices more quickly than randomised controlled trials or sophisticated statistical methods while achieving many of the same advantages. In addition, outcomes improved when practice associated with better outcomes in PBE-CPI analyses were adopted in practice.

The debate regarding the nature of evidence and the various research approaches employed to generate knowledge will continue. Some will insist on evidence based practice being the only method of guiding practice due to its roots in the natural sciences.
and its rigorous methods. On the other hand, advocates of the practice based evidence approach will insist that human beings are complex and do not fit into the narrow view of the world inherent in evidence based practice. A departing thought on this debate comes from Albert Einstein who said, “not everything that can be counted counts and not everything that counts can be counted” (Swisher, 2010, p.4).
3.13 Chapter Summary

The Literature Review adopted a narrative style to examine some of the most pertinent subject areas relating to the practice setting, the Movement Matters programme and the individuals involved in the study. The review was divided in two parts. Part One explored topics related to students with SEBD. It examined some of the socioeconomic factors that impact on a child’s cognition and behaviour and the development of SEBD and teachers perspectives of these challenges. The sensory integration theory that informed the development of the Movement Matters Programme was explained with reference to its ‘evidence base’. The literature regarding occupational therapy practice in schools, and with students with SEBD was outlined. Part Two reflected the post positivistic philosophy in research which is rooted in a more holistic perspective and states that an absolute reality can never be understood but rather only approximated (Denzin and Lincoln, 2000). A review of the clinical reasoning literature in occupational therapy was outlined before the debate regarding knowledge generation, the nature of knowledge and ways of knowing in the health and social sciences was discussed.

3.13.1 So what?

The Literature Review aimed to communicate the complexity of the practice context in which the study is grounded and outline the debate within the occupational therapy literature regarding methods practice within such a setting and the evidence base behind some of the prominent approaches employed.

The challenge faced by the practitioner/researcher throughout the research study was to generate new knowledge in this emerging, understudied area. This involved balancing the post positivistic philosophy of his profession with the pressure of positivist methodologies of the NBSS.

The next chapter will describe the methods used to achieve the study aim.
4 Chapter 4: Methodology

4.1 Introduction

The purpose of this chapter is to describe the methods by which this study was carried out. The chapter begins with a reference to reflexivity and transparency and how these components have influenced the researcher and the design of the methodology. The study aim and objectives and philosophical worldview that influenced the research approach is briefly visited. The research design rationale is explained, the data collection procedures and tools are presented. The analytic methods used and the role of the researcher is also discussed.

4.2 Reflexivity

Reflexivity has been proposed as an essential component for all research (Finlay, 1998, Finlay, 2006). Reflexivity acknowledges the “central position of the researcher in the construction of knowledge” (Banister et al., 1994, p.151). This approach encourages disciplined self-reflection and continuous evaluation of the method of research. All research strives to be valid, rigorous and relevant but subjectivity has been viewed as a weakness in its method. Reflexivity embraces subjectivity as an opportunity to uncover rich understandings within the area being studied. Ballinger (2004) identified reflexivity and transparency as key criteria for rigour in research from the relativist position. Transparency refers to the degree to which all relevant aspects of the research process are disclosed. With these concepts of reflexivity and transparency in mind, this Methodology Chapter will open and close with a reflexive account in the first person (text in italics) from the researcher detailing the personal ‘methodological journey’ he has been on since commencing the study. Finlay (2006) uses this reflexive style in her writing to demonstrate to the reader, different dimensions in her thinking and considers that it is a useful tool when critically evaluating one’s work.

The thought of writing the methodology chapter for my PhD thesis has always brought instant anxiety to bear upon me. I have always found reading the methodology chapters of peers or colleagues intimidating, dull and filled with jargon that instantly makes you feel inferior and less intelligent. I recall having a ‘critical discussion’ with a colleague, also doing a PhD in occupational therapy during my final year. It was an opportunity to start defending my research approach and findings with a colleague from the same discipline but coming from a different philosophical perspective. I was surprised how she spoke of her project.
She was in her 2nd year of four and already knew exactly how the final project would be structured and presented. She had a template that she was following and had no reason to see herself deviating from it. The data would be simply applied to the template and the results/findings would present themselves. This colleague was conducting an RCT supplemented by qualitative data in the form of focus groups. She was completing her study in the traditional academic way i.e. working from a university, recruiting participants to engage in a therapeutic intervention and attempting the measure its effectiveness.

My PhD journey is quite different for a number of reasons. Firstly, the data for this project presented itself to me in an opportunistic nature. I was practicing in this area and was involved in the design and trialling of the intervention as part of my ‘day job’. I can’t confess to having a deep burning love of research or desire to complete a PhD. But when my manager and mentor presented the opportunity to use the data that was to be collected as part of a potential PhD project, I knew that it was the right step to take professionally and I steeled myself for the challenge ahead. Secondly, I assumed that objectivity in all research was a vital requirement. The way I thought about study methodologies in the early days of the PhD journey compared to now, reflects the learning that I have experienced. The unique and unconventional nature of my study required me to read widely into the subjects under study but also get a deep understanding of research methods and philosophies. I came to realise that subjectivity can be regarded as a strength and add to a study’s rigour, validity and relevance. Instead of searching through the research design textbooks or other theses to find a method that retrospectively fitted my project to give the impression of objectivity, I embraced the subjective aspect of the project. Thirdly, an enduring self-doubt as to the quality and confusion about the direction of the project made designing a methodology particularly challenging. As the depth of my reading increased, so did the quality of my thinking regarding the data and the identifying the ‘golden thread’ that would run throughout the study. My thinking evolved from viewing the study as an effectiveness trial of a new programme to building understanding of occupational therapy practice in an emerging area of practice.

In the interests of transparency, I have constructed a timeline of my practice and research journey over a seven-year period to provide readers with further context and detail of the practice that preceded this study and that continued to develop during and after the study period. Figure 8 below outlines my practice journey, periods away from practice and the commencement of my research journey.
2010/2011
- Interpersonal skills group (L.3).
- Self regulation programme research.
- Alert Programme identified as suitable.

2011/2012
- First OT led Alert Programme feasability study (L.1).
- Positive results - materials/content adapted.

2012/2013
- National pilot of teacher led Alert Programme (L.2).
- Identification of need for intensive movement programme.
- Design of Movement Matters programme (L.3).

2013/2014
- Researcher away from practice (travelling).
- Feasability study of Movement Matters (researcher not involved).
- Inception and design of 'Brick by Brick' programme* (L.3).
- Continuation of Alert Programme.

2014/2015
- Researcher returns to practice.
- National pilot of Movement Matters programme.
- Implementation of 'Brick by Brick' programme.
- Design of 'People Skills' programme** (L.2).
- Continuation of Alert Programme.
- Collection of clinical reasoning qualitative data.

2015/2016
- Analysis of student quantitative data.
- Collection of clinical reasoning qualitative data.
- Continuation of Alert/Movement Matters/Brick by Brick programmes.
- Feasability study of People Skills programme.

2016/2017
- Analysis of clinical reasoning qualitative data.
- Continuation of Alert/Movement Matters/Brick by Brick programmes.
- National pilot of People Skills programme.
- Design of 'Getting it Together' organisational skills programme (L1/2/3).

2017/2018
- Continuation of NBSS occupational therapy practice.
- PhD thesis submission.
- NCSE publish the 'Comprehensive review of the Special Needs Assistant Scheme'.
- Demonstration Project on In-School Therapy Support announced by Department of Education for 2018/2019.
- Researcher appointed 'Clinical Lead' for occupational therapy for the Demonstration Project.

* A task-focused group intervention for students at risk of early school leaving, and/or low academic motivation, and/or socially vulnerable. Developed by a ‘BfL teacher’ and occupational therapist.

** The People Skills Programme is a foundational social skills programme developed for use within the Irish post-primary school context. It aims to facilitate students to develop awareness of the foundational social skills.

Figure 8. The practice and research journey timeline
that support social competence in multiple contexts and promote successful participation and engagement in school life. Developed by teachers, speech and language therapists and occupational therapists.

As can be seen, I spent three years developing practice in the area of self-regulation guided by sensory integration theory and evidence informed programmes before the Movement Matters programme was conceived and designed. In November 2013, I left my position within the service and travelled around the world with my partner before returning to practice and beginning the research journey one year later in November 2014. This is relevant in relation to my role as a researcher collecting data from my own ‘backyard’ as Glesne and Peshkin (1992) refer to it. The first feasibility study of the Movement Matters programme was conducted by the NBSS during the period of my absence and the findings are outlined in the results chapter and are published by the Department of Education (NBSS, 2015d). I had no involvement in the implementation of the Movement Matters programme during this period which provided me with distance from it for an entire year. While there is a natural sense of ownership in a programme that I was involved in designing, not being involved in its initial trialling certainly reduced that feeling. I was able to independently view the findings of the feasibility study which gathered the perspectives of the students and teachers using it as I was removed from the generation of that data. It is also important to note that the programme was found to be successful in this period and my colleagues developed its content further following consultation with the students and teachers. It is also important to note from the timeline that the Movement Matters programme is one of many programmes designed by NBSS occupational therapists and teachers specifically for the practice context of mainstream post primary school in areas of social disadvantage across all levels of the three tiered model of support. The Movement Matters programme was not the sole focus of my attention over the research period. My time was split between continuing the development of the occupational therapy service within the NBSS which involved teacher CPD, in-school support, the refining of existing interventions and the development of new programmes, while also collecting and analysing the data for my PhD study. All of these programmes and interventions are developed in a similar process of occupational therapy-teaching partnership to be used to support the learning of students in the school environment.
4.3 Research Aim

This study aims to understand the process of developing practice in an emerging context for occupational therapy by focusing on a recently developed programme, ‘Movement Matters’. Understanding is developed through the application of pragmatic and interpretative approaches.

The researcher is a practising occupational therapist, was one of the developers of the Movement Matters programme, and was working in a national educational service who adopted an ‘evidence based’ perspective regarding its interventions and supports. The service engaged in a range of research activities, often including the measurement of attitudes related to student experiences and behaviour held by teachers, parents and the student themselves.

The study aim and objectives have been described in detail in Chapter One. These objectives are presented below in a more succinct manner for clarity and ease of reading.

4.3.1 Research Objectives

1. To describe and critique the practice that led to the development of the Movement Matters Programme in the context area.

2. To examine student attitudinal and behavioural measures before and after participating in the Movement Matters Programme.

3. To map and describe the clinical reasoning process of the occupational therapists who designed the Movement Matters programme in order to understand the development of the practice.

There is a strong rationale for choosing the research objectives described. This is a study about developing occupational therapy practice in an emerging area. With that in mind, describing and critiquing the practice that led to the development of the Movement Matters programme adds credibility to the intervention in focus and provides the foundation for the study’s significance and relationship to practice (Boswell and Cannon, 2011). In studying the development of practice within an emerging context, the clinical reasoning of the occupational therapists involved is considered valuable (Schon, 1983; Hutton, 2008). As data relating to the students’ and teachers’ experiences of the Movement Matters programme had previously been collected and reported on (NBSS,
2015d), this study focuses on collecting data that is unique to the profession and the area of practice. This data is in the form of student measures of behaviour and attitude before and after the intervention period and the clinical reasoning of the occupational therapists who designed the programme and observed it in use. A more detailed rationale and description of the data collection procedures related to each objective are outlined later in the chapter.

4.4 Philosophical Worldview

The guidance of a research approach to data gathering and analysis is central to any research project and will have a direct impact on the findings of a study. Research approaches are influenced by philosophical worldviews. The research design for this study is reflective of the pragmatic and interpretative worldview. Pragmatism arises out of actions, situations and consequences rather than antecedent conditions (Creswell, 2014). This view is concerned with applications, what works and the solutions to problems (Patton, 1990). As was described in the Introductory Chapter, this study is about establishing and developing occupational therapy practice in an emerging area. With that in mind, pragmatism offers the researcher the freedom to choose the methods, techniques and procedures of research that best meet their needs and purposes (Creswell, 2014). The pragmatic worldview complements the researcher’s work in the setting of mainstream post primary schools in areas of social disadvantage and with students with social, emotional and behavioural difficulties. These settings are characterised by their unique social and cultural contexts. This means that research completed in these schools is a product of their complex environments and cannot be generalised or made fact. But rather, “truth is what works at the time” (Creswell, 2014, p. 11). This perspective on research and knowledge generation is shared by Patton (1990) who is concerned with ‘what works’ and Kielhofner (2005) who explains that “practitioners and clinicians judge knowledge by what it allows them to do and the practical results it generates” (p.8). Pragmatism as an approach to research is well suited to the occupational therapy profession as it shares the philosophical ideals of functionality and problem solving.

Interpretive research is a research paradigm that is based on the assumption that social reality is not singular or objective, but is rather shaped by human experiences and social contexts and is therefore best studied within its socio-historic context by reconciling the subjective interpretations of its various participants (Bhattacherjee, 2012). As interpretive research views social reality as being embedded within and impossible to abstract from
the social context of the study, reality is interpreted though a sense-making process rather than a hypothesis testing process as is the case in positivist research. While interpretive research is generally associated with qualitative data gathering, it recognises that quantitative data may add more precision and clearer understanding of the phenomenon of interest than qualitative data leaving it to the researcher to determine the most appropriate design. The interpretative paradigm is appropriate to a practice development study such as this for two reasons. First, interpretive research employs a theoretical sampling strategy, where study sites, respondents, or cases are selected based on theoretical considerations such as whether they fit the phenomenon being studied. Teachers were recruited specifically for this study as is explained in more detail in section 4.6.3. Second, the role of the researcher receives critical attention in interpretive research. In some methods, the researcher is considered part of the social phenomenon, and his specific role and involvement in the research process must be made clear.

4.5 Mixed Method Research

Pragmatic and interpretive approaches are considered the main philosophical underpinning for mixed method research. Mixed methods research involves the collection of both qualitative (open ended) and quantitative (closed ended) data in response to research questions or hypothesis.

4.5.1 Rationale

The researcher recognises the opportunistic nature of the manner in which the research opportunity was presented. The NBSS Movement Matters Team was planning a ‘national pilot’ of the Movement Matters Programme involving quantitative outcome measurement following on from the feasibility study that was completed in the 2013/2014 academic year. In research, feasibility studies are used to determine whether an intervention is acceptable in a particular context, practical for a desired population, and appropriate for further evaluation (Bowen et al., 2009; Tickle-Degnen, 2013). These studies often focus on whether changes of a programme’s contents or procedures are necessary to fit a desired population or context (Bowen et al., 2009). Once the protocol is established through a feasibility study, more rigorous and quality research can be completed. Having completed a feasibility study which found that the Movement Matters programme was appropriate for the context and was practical and appropriate for the student and teachers using it (NBSS, 2015d), a more ‘rigorous’ method was envisaged. This positivist approach reflected the
desire of the NBSS to evaluate the efficacy of the programme and adhere to an evidence based practice approach. The researcher’s training as an occupational therapist and practice experience has influenced the development of a pragmatic philosophy in relation to research approaches which recognises the rigour of quantitative measurement and also the relevance of qualitative data.

A mixed method approach has been identified as particularly useful for “better understanding the need for and impact of an intervention programme” (Creswell, 2014, p.218). A mixed method approach allows the researcher to focus on the research problem and utilise all methods to understand and derive all knowledge about the problem. Therefore, by employing a mixed method design, the quantitative and qualitative data provide the best understanding of the research problem.

The Medical Research Council (MRC) identifies two key questions when evaluating complex interventions. The first relates to practical effectiveness while the second relates to how the intervention works or in other words, “what are the active ingredients within the intervention and how are they exerting their effect?” (Craig et al., 2008, p.7). In this study, the practical effectiveness is addressed in the second study objective utilising pre and post student quantitative data while the third objective explores how the programme ‘works’ by gathering qualitative data pertaining to the occupational therapist’s clinical reasoning. The Medical Research Council also reports on two case studies of complex intervention evaluation that support the rationale for the mixed method approach chosen for this study. The authors describe how a ‘process evaluation’ can provide useful insights into the success or failure of an intervention (Craig et al., 2008). This approach is concerned with the process of affecting change through the analysis of intervention outcomes (quantitative) in conjunction with the perceptions of practitioners and/or participants (qualitative). In contrast, a clinical trial focuses on outcomes alone. The MRC describes a second case study that supports the approach of this occupational therapy study. ‘Reporting evaluations of complex interventions’ is considered important regardless of the results. The authors deem it valuable to report the process of development and implementation as well as results/outcomes. The intervention/programme should be reported in detail in order that further research or larger scale implementation could be done.

Finally, Pawson and Tilley (1997) refer to ‘realist evaluation’ which is an appropriate perspective to frame the emergence of this research opportunity. As is stated in this study’s
title, practice development is the focus. Naturally, an aspect of developing practice is the evaluation of the interventions or programmes at the heart of the practice. The cornerstone of realist evaluation is a distinctive viewpoint on how programmes bring about change. It is only by understanding and probing its apparatus of change that one can evaluate a programme. According to realist evaluation, programmes such as those reported in this study are ‘theories’, which are embedded in the complex social systems of schools where desired outcomes are dependent on (1) the individual capacities of students and teachers, (2) the interpersonal relationships created between them, (3) the institutional environment of schools that promote alternative views on behaviour and learning and (4) the wider educational system and policy makers that support or undermine the participation of students with diverse learning needs. Pawson and Tilley (1997) also view programmes as ‘active’ with the participant of the programme playing a key role in its success or failure. This means that an understanding of the interpretations of programme participants is integral to evaluating its outcomes. Programmes are also part of ‘open systems’ and cannot be fully isolated or kept constant. They are permeable and plastic and are sensitive to wider social, cultural and political changes. Realist evaluation has no particular preference for either quantitative or qualitative methods. Indeed, it values multiple methods, merging the quantitative and qualitative, so that both programme processes and impacts may be investigated. The precise balance of methods to be used is selected in accordance with the realist subject matter, and with the available data. The realist perspective on evaluation empowers the researcher to select the methods and tools for gathering data that is deemed appropriate in an opportune and unfolding research context such as is described in this study.

4.5.2 Design

There are numerous mixed method designs developed to collect and analyse data in different ways depending on the setting and research goals. An embedded mixed method design was identified as the most appropriate method for analysing the data gathered due to its popularity in the health sciences and when investigating an intervention or programme in an applied setting such as schools (Creswell, 2014). As the study aims to understand the process of developing practice in an emerging context, this design is a good fit as it adds “understanding to experimental results by incorporating perspectives of individuals” (Creswell, 2014, p. 228).
By considering the embedded mixed method design outlined in Figure 8 below, and applying the research objectives to this method, a concrete methodology for achieving the aim of the study emerges.

Creswell (2014) describes how mixed method studies can begin with a broad survey in order to generalise results to a population and then, in a second phase, focuses on qualitative, open ended interviews to collect detailed views from participants. This approach has been adopted in this study and can be seen in the development of the second and third research objectives in Table 3 below. The data pertaining to the second and third research objectives was collected in a parallel manner. It is not converged but rather studied independently from each other to deliver two different perspectives on research on the same topic, the Movement Matters programme.
### Table 3. The Rationale for the Study Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Data</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Qualitative</td>
<td>To inform the overall aim of the study by establishing whether the documentation on practice adheres to the vision for the NBSS occupational therapy service as outlined by MacCobb (2012).</td>
</tr>
<tr>
<td>#2</td>
<td>Quantitative</td>
<td>By employing an experimental design to measure attitudes and behaviour before and after the intervention, the researcher is attempting to measure the programme’s ‘value’ reflecting a positivistic approach.</td>
</tr>
<tr>
<td>#3</td>
<td>Qualitative</td>
<td>The qualitative methods add layers of contextual understanding to the process of developing the programme. This reflects the interpretative paradigm within the study.</td>
</tr>
</tbody>
</table>
4.6 Movement Matters Programme Description

The programme is composed of 20 sessions, run each day for approximately 30 minutes with two students. It consists of a range of activities to build students’ skills and confidence in four key developmental movement categories: Prone Extension; Bi-lateral Integration; Supine Flexion and Postural Control. The selection and development of these categories was informed by the ongoing research and advancement of Sensory Integration theory (Ayres, 1972b, Ayres, 1979b, Schaaf and Miller, 2005). While the intervention does not adhere to the strict criteria of Ayres ‘Sensory Integrative Approach’ (Ayres, 1972, Ayres, 1979) in terms of its implementation, it is very much grounded in the theory of sensory integration and modulation (Miller and Lane, 2000, Willingham, 2011), with the expectation of improved self-regulation and participation in the classroom.

4.6.1 Typical Session Outline

Table 4. Typical Session Outline

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calmness scale &amp; reflection</td>
<td>➢ Student indicates on scale below how calm or hyper they feel on entering the room for the session and are asked to explain why they feel a certain way.</td>
<td>1 minute</td>
</tr>
</tbody>
</table>

MOVEMENT MATTERS
"HOW CHILLED OUT (CALM) DO I FEEL?"

When I came into work with my teacher I felt:

<table>
<thead>
<tr>
<th>Very Hyper</th>
<th>Hyper</th>
<th>OK</th>
<th>Chilled Out</th>
<th>Very Chilled Out</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The purpose of the warm-up and stretching is more than just preparing the students' musculoskeletal systems for the exercise ahead, but rather it serves to regulate their arousal levels to ensure that concentration and energy levels are appropriate for the session.

Students can present for sessions in a highly aroused, excitable, hyper state. The warm up aims to calm and organise them for the concentration required in the session.

<table>
<thead>
<tr>
<th>Warm-up/stretching</th>
<th>5 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neck Stretch</td>
<td></td>
</tr>
<tr>
<td>Shoulder Warm-up</td>
<td></td>
</tr>
<tr>
<td>Shoulder Stretch</td>
<td></td>
</tr>
</tbody>
</table>
### Warm-up

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prone extension</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Supine flexion</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Bilateral coordination</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Postural control</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Pulse</td>
<td>1 minute</td>
</tr>
</tbody>
</table>

**Cool Down/Calm Down Activity**

To Take Pulse:
1. Students sit upright with back against chair and feet flat on the floor.
2. Take two fingers and press them on the side of your neck in the soft hollow area just below your Adam's apple.
3. Count the number of beats you feel for 1 minute or for 30 seconds and multiply by two.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calmness scale &amp; reflection</td>
<td>Student indicates on scale below how calm or hyper they feel after completing the session. They are asked to explain their choice.</td>
<td>1 minute</td>
</tr>
<tr>
<td><img src="image" alt="Calmness Scale" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Target sheet review/ goal setting/ organisational skills/ rapport building | This 10 minutes at the end of the session is an excellent opportunity for the Behaviour for Learning teacher to engage in a range of activities such as behaviour target review and goal setting with students.  
This time can also be used to organise students for upcoming lessons and/or reflect on any issues they might be encountering. | 10 minutes |
4.6.2 Session Plan Examples

Refer to Appendix 2H for all of the session plans for ease of reading.

<table>
<thead>
<tr>
<th>Prone Extension</th>
<th>Supine Flexion</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Prone Extension Image]</td>
<td>![Supine Flexion Image]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bilateral Coordination</th>
<th>Postural Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Bilateral Coordination Image]</td>
<td>![Postural Control Image]</td>
</tr>
</tbody>
</table>
Session 1 & 2

**Prone Extension**
- Prone Extension and Jig Saw
  - Hands flat and extend body over ball.
  - Head Up.
  - Roll back and forward between each piece.
- Activity: assemble jigsaw (6-8 pieces).
  - Table Position (hands and knees)
  - Independent arm extension left and right.
  - Independent leg extension left and right.
  - Lift opposite arm leg together alternate pattern.
  - (cross lateral movement)
  - Increase from 5 ~ 20 seconds holding time.

**Supine Flexion**
- Curl and Hold
  - Hold knees to chest.
  - Lift head to knees.
  - Hold position.
  - Progress to releasing knees and crossing arms across chest while maintaining the curled position.
- Egg Roll
  - Holding knees to chest in sitting position roll back and return to sitting position in continuous movement.
  - 10 repetitions

**Bilateral Coordination**
- Smile Exercises
  - Ladder Drill Walk/Run through.
    - Walk through x 2.
    - Run through x 5.
  - 2 feet in - lead with left foot x5.
  - 2 feet in - lead with right foot x5.

**Postural Control**
- Ball Balance
  - Attempt to balance on ball with both feet off the floor and hold for 20 seconds.
  - Progression: one foot on floor – both feet off floor.
  - Standing balance feet on ball: Stand behind ball with one foot on floor and one foot on ball.
  - Roll ball forwards/backwards.
  - Roll ball to the left/right.
  - Roll ball in a circular motion.
  - Repeat with other foot.

---

Session 13 & 14

**Prone Extension**

**Supine Flexion**

**Bilateral Coordination**

**Postural Control**

© NBSS
### Session 13 & 14

<table>
<thead>
<tr>
<th>Prone Extension</th>
<th>Supine Flexion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prone Extension and Magnet Fishing</td>
<td>Medicine Ball Twist</td>
</tr>
<tr>
<td>• Hands flat and extend body over ball</td>
<td>• Cross feet at the ankles and lift feet.</td>
</tr>
<tr>
<td>• Head Up</td>
<td>• Twist torso and touch ball off spots placed to the left and right of student. (10x3 repetitions)</td>
</tr>
<tr>
<td>• Roll back and forward between each turn</td>
<td>Pairs</td>
</tr>
<tr>
<td>• Activity: Spread out discs so that students have to roll over ball and stretch out to collect the discs using the magnet rod.</td>
<td>• Students sit on mats beside each other with one spot on the outside of each student.</td>
</tr>
<tr>
<td></td>
<td>• One student starts by touching medicine ball off spot and then meeting in the middle and passing ball onto partner, who does the same and repeats. (10x3 reps)</td>
</tr>
<tr>
<td>Tips: Students may rest on their elbows during the activity but it is important that they roll back on the ball pushing through hands.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bilateral Coordination</th>
<th>Postural Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiley Exercises</td>
<td>Split Squat with Foam/Medicine Ball</td>
</tr>
<tr>
<td>Ladders Turnaround</td>
<td>• Establish position one foot on disc and one foot behind.</td>
</tr>
<tr>
<td>• 2 feet jump thirty degrees clockwise each ladder gap x 5</td>
<td>• Ensure that knee does not extend over toe of front foot.</td>
</tr>
<tr>
<td>• 2 feet jump ninety degree anti-clockwise each ladder gap x 5</td>
<td>• Bend both knees to 90 degree angle.</td>
</tr>
<tr>
<td></td>
<td>• 10 repetitions left foot leading and right foot leading</td>
</tr>
<tr>
<td></td>
<td>Plank on balance disc:</td>
</tr>
<tr>
<td></td>
<td>• Position body in plank with elbows balancing on disc</td>
</tr>
<tr>
<td></td>
<td>• 3 repetitions minimum 10 seconds per hold</td>
</tr>
<tr>
<td>Tips: Let student strength and ability dictate the number of repetitions.</td>
<td></td>
</tr>
</tbody>
</table>
The Movement Matters Programme was specifically designed by professionals from the occupational therapy and teaching professions to be deliverable in the environment of a Behaviour for Learning classroom. This classroom is a designated space in a school where the Behaviour for Learning Programme teacher implements the action plan drawn up as part of Level 3 student’s individualised Behaviour for Learning plan.

Depending on their level of need at a particular time, a Level 3 student could be timetabled to attend the Behaviour for Learning classroom to work on skill areas identified on his/her Behaviour for Learning plan between three and five class periods a week. A class period is typically forty minutes in Irish post primary schools. For example, a Level 3 student would leave a mainstream lesson, attend the Behaviour for Learning classroom for a class period to work on skills that aim to help him/her to engage better in learning and then return to their mainstream lessons the next period after that. For students selected for the Movement Matters programme, this is how the programme is integrated into their school day.

4.6.3 Teacher Recruitment, Training and Support

Specifically identified Behaviour for Learning teachers from NBSS partner schools were invited to participate in the Movement Matters training, intervention and research process.
These teachers were identified and invited to participate based on the Movement Matters team experience of working with them, suitability of their environment and number of potentially suitable students for the programme. Teachers who had experience of using the Alert Programme and expressed a particular interest in sensory integration theory, movement and exercise were considered best candidates for training. As the teachers recruited to participate in the study had pre-existing positive relationships with the occupational therapists through previous well received occupational therapy programmes, ‘buy in’ was not generally a challenge to overcome as is frequently the case in in-school occupational therapy practice (Wintle et al., 2017).

Behaviour for Learning teachers who agreed to participate in the intervention and research process were provided with a one day training prior to commencement of the programme and supplied with a resource box with all equipment required to deliver the programme. The content of the training day included:

- Background/rationale for the programme.
- Student selection.
- Sensory integration theory that informed the exercises.
- The data collection process.
- Teaching the session plans.
- Distribution of resource boxes.

The Movement Matters team provided once weekly support to the teachers in their schools to assist them with session delivery, problem solving, making small alternations to sessions to suit specific students’ needs as necessary and planning for future use of the programme. These visits also provided the team with valuable observations of the programme in use with students which informed their clinical reasoning and planning for future trials.

4.6.4 Student Selection

Two students are selected to complete the programme in each school. The activities are designed in way that allow two students to engage in games together, but if one student is absent, the other can continue with the session and complete it on his/her own or with some help from the teacher.
The selection criteria for students is not strict other than that the students would have completed the adapted Alert Programme (NBSS, 2015b), in order that they were familiar with the concept and language of self-regulation. Teachers are advised by the Movement Matters team that the programme is designed for Level 3 students exhibiting behaviours consistent with a profile of Attention Deficit Hyperactivity Disorder (ADHD) or Sensory Modulation Disorder (SMD). However, they do not require an official diagnosis of such a disorder to participate. The behavioural characteristics of ADHD are listed below.

**Inattention**

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities  
(b) often has difficulty sustaining attention in tasks or play activity  
(c) often does not seem to listen when spoken to directly  
(d) often does not follow through on instructions and fails to finish schoolwork, chores (not due to oppositional behaviour or failure to understand instructions)  
(e) often has difficulty organizing tasks and activities  
(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)  
(g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books or tools)  
(h) is often easily distracted by extraneous stimuli  
(i) is often forgetful in daily activities

**Hyperactivity**

(a) often fidgets with hands or feet or squirms in seat  
(b) often leaves seat in classroom or in other situations in which remaining seated is expected  
(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)  
(d) often has difficulty playing or engaging in leisure activities quietly  
(e) is often “on the go” or often acts as if “driven by a motor”  
(f) often talks excessively  

**Impulsivity**

(g) often blurts out answers before questions have been completed  
(h) often has difficulty awaiting turn
(i) often interrupts or intrudes on others (e.g., butts into conversations or games) (American Psychiatric Association, 2013, p. 59).
4.7 Data Collection

The following section outlines the methods and procedures through which the data for the study was collected. There are 3 study objectives, each with a separate data gathering process and analysis as outlined in Figure 10 below.
STUDY AIM
To understand the process of developing practice in an emerging context for occupational therapy by focusing on a recently developed programme, ‘Movement Matters’.

OBJECTIVE ONE
To describe and critique the process of developing the Movement Matters Programme in the context area.

PART ONE
Qualitative data analysis

Step One
Practice Description

Step Two
Practice Critique

OBJECTIVE TWO
To analyse student attitudinal and behavioural measures before and after participating in the Movement Matters Programme.

PART TWO
Quantitative data analysis

Step One
Student Participant Profile

Step Two
Pre and Post Group Testing

OBJECTIVE THREE
To map the clinical reasoning process of the occupational therapists who developed and observed the programme in use.

PART THREE
Qualitative data analysis

Interview #1
Interview #2
Interview #3

Figure 11. Study Overview
4.7.1 Ethical Considerations

Permission to conduct this research study was granted by the NBSS. This included permission granted by parents, students and teachers for their data to be included in the study. The ethical requirements of the Faculty of Health Sciences Ethics Committee, Trinity College Dublin were met (See Appendix 1A). All national child protection and national good practice guidelines for working and researching with children in school were adhered to in the trial and in the review and exploration of the trial data. All ethical decisions regarding this study were made following discussions with the research supervisor and NBSS coordinator.

4.7.1.1 Anonymity and Confidentiality

In this study the anonymity and confidentiality of the student participants was guaranteed and participant identities were protected throughout the study. Ensuring confidentiality meant guaranteeing that no connection could be made between a specific participant and a set of information that person provided (Kirby, Greaves & Reid, 2006). A number of strategies were employed to ensure the anonymity and confidentiality of participants. All student, parent and teacher data gathered by the NBSS and forwarded to the researcher was anonymous. Data gathering is a core expectation and responsibility of the Behaviour for Learning teacher role within the NBSS. The teachers and students involved in the data gathering process were not identifiable by the time the researcher received the data. All respondents were assigned an ID number. ID numbers only were entered into the computer for data analysis. All questionnaires and evaluation tools were stored in a locked filing cabinet. All research data will be maintained for five years.

With regard to the occupational therapist participant in the three semi-structured group interviews, it is acknowledged that confidentially and anonymity is challenging as only two therapists from a team of three are involved in the interview. Although contributing to research is an expectation of the practice team in this area as part of their professional responsibility, particular care was taken inviting the colleagues of the research to take part. A gate keeper (individual outside their workplace) process was used to inform about the study and seek participation.
4.7.1.2 Ethical Permission: Parents and Students

Informed consent in research involves ensuring that participants have a sufficient understanding of the research project in order to voluntarily agree to participate (Behi & Nolan, 1995). Information conveyed to participants needs to be comprehensive enough for them to make an informed decision. On entering First Year in school, permission was obtained from parents by the NBSS for their child’s participation in any NBSS activities, of which the Movement Matters Programme was one. In addition, parents and guardians were contacted by the teacher facilitating Movement Matters via telephone or letter and provided with information regarding the Movement Matters Programme which their child would be invited to participate in. Parents and guardians were invited to make contact with the teacher if they had any further questions or concerns. Students were invited to participate in the programme and also gave on-going consent for their participation in each session.
4.7.2 Participants

The participants for this study are the 39 students (see earlier section on student selection) who engaged in the Movement Matters Programme over the course of the research period (2014/2015) and the two occupational therapists on the Movement Matters team who were involved in the programme’s design and implementation in schools, one of whom is the researcher. Thirteen teachers in 13 schools in urban (9) and rural (4) settings were involved in delivering the programme.

4.7.3 Quantitative Measures: Research Objective 2

The quantitative measures relating to Objective 2 of the study are described first in keeping with the positivistic perspective of the NBSS. The qualitative methods of objectives 1 and 3 will follow after.

4.7.3.1 Rationale

Following the feasibility study (NBSS, 2015d) conducted by the Movement Matters team in the 2013/2014 academic year, the NBSS decided that standardised and relevant quantitative outcome measures should be included in the research methodology of the national pilot of the programme in the 2014/2015 academic year in order to adhere to an evidence based practice approach. These quantitative methods aim to address the second objective of this study which is to analyse student attitudinal and behavioural measures before and after participating in the Movement Matters programme, specifically the Strengths and Difficulties Questionnaire (SDQ) and Pupil Attitude to Self and School measure (PASS). This is intended to inform an understanding of the value of the programme from a positivist perspective within this newly emerging practice context. I decided to include these measures in this study for a number of reasons.

1) The feasibility study of Movement Matters in the 2013/2014 academic year (NBSS, 2015d), already reported quantitative data pertaining to student perception of calmness pre and post each Movement Matters session, Behaviour for Learning teacher perception of student calmness pre and post each session and mainstream classroom teacher perception of student calmness pre and post each session. The feasibility study also reported qualitative ‘student voice’ data.
2) There was an element of ‘researcher curiosity’ to see whether the positive impact of the programme reported in the feasibility study (NBSS, 2015d) would be captured in widely used standardised measures.

3) There was also an interest in building a profile of ‘Level 3’ students with identified SEBD using these measures and to compare the group to normative data from a similar social and cultural population (UK).

Eight individual measures (four pre intervention and four post intervention) comprise a ‘complete data set’.

**Table 5. The Eight Measures that comprise a 'complete data set'**.

<table>
<thead>
<tr>
<th>4.8 Pre measures</th>
<th>4.9 Post measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PASS</td>
<td>1. PASS</td>
</tr>
<tr>
<td>2. SDQ Teacher</td>
<td>2. SDQ Teacher</td>
</tr>
<tr>
<td>3. SDQ Parent</td>
<td>3. SDQ Parent</td>
</tr>
<tr>
<td>4. SDQ Self</td>
<td>4. SDQ Self</td>
</tr>
</tbody>
</table>

4.9.1.1 **Strengths and Difficulties Questionnaire (SDQ)**

The Strengths and Difficulties Questionnaire (SDQ) is a brief behavioural screening questionnaire about 3-16 year olds. It exists in several versions to meet the needs of researchers, clinicians and educationalists.

4.9.1.1.1 **Reliability of SDQ**

The SDQ was chosen as an outcome measurement for the study as it has been used by the NBSS in prior studies (NBSS et al., 2013) to measure changes in behaviour and is recognised as an appropriate tool for evaluating interventions. "Before" and "after" SDQs can be used to audit everyday practice (e.g. in clinics or special schools) and to evaluate specific interventions (e.g. parenting groups). Studies using the SDQ along with research interviews and clinical ratings have shown that the SDQ is sensitive to treatment effects.
Students who participated in the Movement Matters Programme were measured from three sources; self, parent/guardian and teacher before and after the programme was delivered.

4.9.1.1.2 Administration of SDQ

The researcher was not involved in the interactions with students while the SDQ measures were being administered before and after the 20 sessions of the Movement Matters Programme. The Behaviour for Learning teachers coordinated the dissemination and collection of the SDQ parent and student measures and completed the teacher measure themselves. The students completed the self-rating SDQ measure in the environment of the Behaviour for Learning classroom. The researcher coordinated the logistics of arranging dates and times for an NBSS associate to collect the SDQ data from the Behaviour for Learning teachers. This data was subsequently anonymised before being forwarded to the researcher.
4.9.1.1.3 **Pre-intervention** Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last six months.

![Strengths and Difficulties Questionnaire](image)

Figure 12. **Self-rated SDQ for 11-17 year olds.**
## Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems dull! Please give your answers on the basis of the child's behaviour over the last six months or this school year.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not True</th>
<th>Somewhat True</th>
<th>Certainly True</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considerate of other people's feelings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restless, overactive, cannot stay still for long</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often complains of headaches, stomach-aches or sickness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shares readily with other children (treats, toys, pencils etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often has temper tantrums or hot tempers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rather solitary, tends to play alone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generally obedient, usually does what adults request</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many worries, often seems worried</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helpful if someone is hurt, upset or feeling ill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constantly fidgeting or squirming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has at least one good friend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often fights with other children or bullies them</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often unhappy, down-hearted or tearful</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generally liked by other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easily distracted, concentration wanders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nervous or clingy in new situations, easily loses confidence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kind to younger children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often lies or cheats</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Picked on or bullied by other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often volunteers to help others (parents, teachers, other children)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinks things out before acting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steals from home, school or elsewhere</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gets on better with adults than with other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many fears, easily scared</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sees tasks through to the end, good attention span</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature: ____________________________ Date: ____________________________

Parent/Teacher/Other (please specify):

Thank you very much for your help

© Professors Goodman, 2003

---

**Figure 13. SDQ for parents or teachers of 4-17 year olds**
4.9.1.1.4 **Post-intervention** Strengths and Difficulties Questionnaire

<table>
<thead>
<tr>
<th>Strengths and Difficulties Questionnaire</th>
<th>S11-17 FOLLOW-UP</th>
</tr>
</thead>
<tbody>
<tr>
<td>For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems dull! Please give your answers on the basis of how things have been for you over the last month.</td>
<td></td>
</tr>
<tr>
<td>Your Name .................................................................</td>
<td>Male/Female</td>
</tr>
<tr>
<td>Date of Birth ...........................................................</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>I try to be nice to other people. I care about their feelings</th>
<th>Not True</th>
<th>Somewhat True</th>
<th>Certainly True</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am restless. I cannot stay still for long</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I get a lot of headaches, stomachaches or sickness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I usually share with others (food, games, pens etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I get very angry and often lose my temper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am usually on my own. I generally play alone or keep to myself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I usually do as I am told</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I worry a lot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am helpful if someone is hurt, upset or feeling ill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am constantly fidgeting or squirming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have one good friend or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I fight a lot. I can make other people do what I want</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am often unhappy, down-hearted or tearful</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other people my age generally like me</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am easily distracted, I find it difficult to concentrate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am nervous in new situations. I easily lose confidence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am kind to younger children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am often accused of lying or cheating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other children or young people pick on me or bully me</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often volunteer to help others (parents, teachers, children)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I think before I do things</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take things that are not mine from home, school or elsewhere</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I get on better with adults than with people my own age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have many fears, I am easily scared</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I finish the work I'm doing. My attention is good</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you have any other comments or concerns?

---

Please turn over - there are a few more questions on the other side

---

123
Since coming to the clinic, are your problems:

<table>
<thead>
<tr>
<th>Much worse</th>
<th>A bit worse</th>
<th>About the same</th>
<th>A bit better</th>
<th>Much better</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Has coming to the clinic been helpful in other ways, e.g. providing information or making the problems more bearable?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Over the last month, have you had difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

<table>
<thead>
<tr>
<th>Yes - minor difficulties</th>
<th>Yes - definite difficulties</th>
<th>Yes - severe difficulties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have answered "Yes", please answer the following questions about these difficulties:

- Do the difficulties upset or distress you?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Do the difficulties interfere with your everyday life in the following areas?

<table>
<thead>
<tr>
<th>HOME LIFE</th>
<th>FRIENDSHIPS</th>
<th>CLASSROOM LEARNING</th>
<th>LEISURE ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Do your difficulties make it harder for those around you (family, friends, teachers etc.)?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Your signature: ..................................................
Today's date: ...........................................

**Thank you very much for your help**

© Robert Goodsen, 2001
Figure 14. Follow-up questions and impact supplement for self-completion by 11-17 year olds.

<table>
<thead>
<tr>
<th>Considerate of other people's feelings</th>
<th>Not True</th>
<th>Somewhat True</th>
<th>Certainly True</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restless, overactive, cannot stay still for long</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often complains of headaches, stomach-aches or sickness</td>
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<td></td>
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<td>Rather solitary, tends to play alone</td>
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<td>Generally obedient, usually does what adults request</td>
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<td>Helpful if someone is hurt, upset or feeling ill</td>
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<tr>
<td>Constantly fidgeting or squirming</td>
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<td></td>
<td></td>
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<tr>
<td>Has at least one good friend</td>
<td></td>
<td></td>
<td></td>
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<td>Often fights with other children or bullies them</td>
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<td></td>
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<tr>
<td>Often unhappy, down-hearted or tearful</td>
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<td></td>
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<tr>
<td>Kind to younger children</td>
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<td></td>
<td></td>
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<tr>
<td>Often lies or cheats</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<tr>
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<td></td>
</tr>
<tr>
<td>Steals from home, school or elsewhere</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Gets on better with adults than with other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many fears, easily scared</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sees tasks through to the end, good attention span</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you have any other comments or concerns?

Please turn over - there are a few more questions on the other side
Since coming to the clinic, are your child's problems:

<table>
<thead>
<tr>
<th>Much worse</th>
<th>A bit worse</th>
<th>About the same</th>
<th>A bit better</th>
<th>Much better</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Has coming to the clinic been helpful in other ways, e.g. providing information or making the problems more bearable?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Over the last month, has your child had difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

<table>
<thead>
<tr>
<th>No</th>
<th>Yes-minor difficulties</th>
<th>Yes-definite difficulties</th>
<th>Yes-severe difficulties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have answered "Yes", please answer the following questions about these difficulties:

- Do the difficulties upset or distress your child?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- Do the difficulties interfere with your child's everyday life in the following areas?

<table>
<thead>
<tr>
<th>HOME LIFE</th>
<th>FRIENDSHIPS</th>
<th>CLASSROOM LEARNING</th>
<th>LEISURE ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Do the difficulties put a burden on you or the family as a whole?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Signature: ____________________________ Date: ______________________

Mother/Father/Other (please specify): __________________________

Thank you very much for your help © Robert Ormstone, 2006

Figure 15. Follow-up questions and impact supplement for the parents of 4-17 year olds.
## Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of the child's behaviour over the last month.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not True</th>
<th>Somewhat True</th>
<th>Certainly True</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considerate of other people's feelings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restless, overactive, cannot stay still for long</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often complains of headaches, stomachaches or sickness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shares readily with other children (treats, toys, pencils etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often has temper tantrums or hot tempers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rather solitary, tends to play alone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generally obedient, usually does what adults request</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many worries, often seems worried</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helpful if someone is hurt, upset or feeling ill</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constantly fidgeting or squirming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has at least one good friend</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often fights with other children or bullies them</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often unhappy, down-hearted or tearful</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generally liked by other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easily distracted, concentration wanders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nervous or clingy in new situations, easily loses confidence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kind to younger children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often lies or cheats</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Picked on or bullied by other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often volunteers to help others (parents, teachers, other children)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thinks things out before acting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steals from home, school or elsewhere</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gets on better with adults than with other children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many fears, easily scared</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sees tasks through to the end, good attention span</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you have any other comments or concerns?

---

**Please turn over - there are a few more questions on the other side**
Since coming to the clinic, are the child’s problems:

<table>
<thead>
<tr>
<th>Much worse</th>
<th>A bit worse</th>
<th>About the same</th>
<th>A bit better</th>
<th>Much better</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Has coming to the clinic been helpful in other ways, e.g. providing information or making the problems more bearable?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Over the last month, has the child had difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

<table>
<thead>
<tr>
<th>No</th>
<th>Yes-minor difficulties</th>
<th>Yes-definite difficulties</th>
<th>Yes-severe difficulties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you have answered "Yes", please answer the following questions about these difficulties:

• Do the difficulties upset or distress the child?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• Do the difficulties interfere with the child's everyday life in the following areas?

<table>
<thead>
<tr>
<th>PEER RELATIONSHIPS</th>
<th>CLASSROOM LEARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Not at all</td>
</tr>
<tr>
<td>Only a little</td>
<td>Only a little</td>
</tr>
<tr>
<td>Quite a lot</td>
<td>Quite a lot</td>
</tr>
<tr>
<td>A great deal</td>
<td>A great deal</td>
</tr>
</tbody>
</table>

• Do the difficulties put a burden on you or the class as a whole?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Only a little</th>
<th>Quite a lot</th>
<th>A great deal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature ___________________________________________ Date _______________________

Class Teacher/Form Tutor/Head of Year/Other (please specify):

Thank you very much for your help

Figure 16. Follow-up questions and impact supplement for the teachers of 4-17 year olds.
4.9.1.2 Pupil Attitude to School and Self

*Pupil Attitudes to Self and School (PASS)* is an all-age attitudinal survey that provides a measurement of a pupil’s attitudes towards themselves as learners and their attitudes towards school, suitable for pupils aged 4 to 18+. This psychometric measurement that has been standardised against a highly representative national sample of more than 600,000 respondents and is used in over 2,500 schools across the UK (Granada Learning, 2016).

It assesses nine core dimensions linked to behavioural difficulties and well-being:

**Table 6. The 9 PASS ‘factors’**.

<table>
<thead>
<tr>
<th>1. Feelings about school</th>
<th>Explores whether a pupil feels secure, confident and included in their learning community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Perceived learning capability</td>
<td>Offers an insight into a pupil’s level of self-respect, determination and openness to learning.</td>
</tr>
<tr>
<td>3. Self-regard</td>
<td>Equivalent to self-worth, this measure is focused specifically on self-awareness as a learner, highlighting levels of motivation and determination.</td>
</tr>
<tr>
<td>4. Preparedness for learning</td>
<td>This measure covers areas such as study skills, attentiveness and concentration, looking at the pupil’s determination and openness to learning.</td>
</tr>
<tr>
<td>5. Attitudes to teachers</td>
<td>This measures a young person’s perceptions of the relationships they have with the adults in school. A low score can flag a lack of respect.</td>
</tr>
<tr>
<td>6. General work ethic</td>
<td>Highlights the pupil’s aspirations and motivation to succeed in life, this measure</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>7. Confidence in learning</strong></td>
<td>Identifies a pupil’s ability to think independently and to persevere when faced with a challenge.</td>
</tr>
<tr>
<td><strong>8. Attitudes to attendance</strong></td>
<td>Correlating very highly with actual attendance 12 months later, this measure enables teachers to intercede earlier with strategies to reduce the likelihood of truancy.</td>
</tr>
<tr>
<td><strong>9. Response to curriculum demands</strong></td>
<td>This measure focuses more narrowly on school-based motivation to undertake and complete curriculum based tasks, highlighting the pupil’s approach to communication and collaboration.</td>
</tr>
</tbody>
</table>

### 4.9.1.2.1 Reliability of PASS

PASS was originally developed over six years by educational psychologists working with four universities and 20 local authorities, and was piloted with more than 100 schools. Subsequently, PASS provides standardised attitude reporting based on a national sample of more than 250,000 pupils at individual, cohort, whole school and local authority levels. Results can be broken down to show how the school compares nationally, as well as to show attitudes according to year group, gender and ethnicity. Integrating the data with other database systems enables risk modelling and highly contextualised interventions. PASS has been verified for test-retest reliability, demonstrating that it measures core attitudes rather than shifting attitudes and tastes. Without this validity, scores would vary significantly when re-measured at another time and be skewed by unknown and tangential influences (Parliament, 2010).

### 4.9.1.2.2 Administration of PASS
The researcher was not involved in the interactions with students while the PASS measure was being administered before and after the Movement Matters Programme. The administration of the pre and post PASS measure was facilitated by an associate of the NBSS who is on The Register of Qualifications in Test Use (RQTU) and has been awarded qualifications in educational test use by the British Psychological Society. This individual was trained by the developers of the measure to administer it and the students did not have had any previous relationship with the assessor. The researcher liaised with the Behaviour for Learning Teacher to arrange the dates and times for the NBSS associate to administer the pre and post PASS measure.

Students answered fifty questions related to the nine core dimensions. These questions are answered using an age appropriate computer programme in the environment of the Behaviour for Learning classroom. The fifty questions can be seen in the PASS summary report below. Students answer each question with:

- No not at all
- No not much
- Yes a bit
- Yes a lot
PASS SUMMARY REPORT

Pupil Name: [redacted]
Date of Birth: [redacted]
School: [redacted]
School Year: 1st
Gender: Male
Ethnicity: Irish

Pupil Percentile Scores:
(N.B. Higher the percentile score the more positive the pupil attitude / self-perception)

Factor 1 - Feelings about school: 3.7
Factor 2 - Perceived Learning Capability: 1.1
Factor 3 - Self-regard as a learner: 0.8
Factor 4 - Preparedness for learning: 0.8
Factor 5 - Attitudes to teachers: 4.4
Factor 6 - General work ethic: 1
Factor 7 - Confidence in learning: 0.9
Factor 8 - Attitude to attendance: 5.7
Factor 9 - Response to curriculum demands: 3.6

PUPIL ATTITUDES TO SELF & SCHOOL:

Individual Item Responses:

Q1. I think carefully about my work. No, not much.
Q2. I worry about getting my work right. No, not much.
Q3. I can ask my teacher when I am stuck with my work. No, not at all.
Q4. I enjoy doing hard school work. No, not at all.
Q5. I can concentrate on my work in class. No, not much.
Q6. I know how to solve the problems in my school work. No, not much.
Q7. I like doing school work at home. No, not at all.
Q8. This school is a friendly place. Yes a bit.
Q9. Teachers explain things well. No, not much.
Q10. My attendance at school is good. Yes a lot.
Q11. Problem solving is fun. No, not at all.
Q12. I'd rather be somewhere else than in school. Yes a lot.
Q13. I think the rules in school are fair. No, not at all.
Q14. I can read well. No, not much.
Q15. I think this is a good school. No, not much.
Q16. I like doing tests. No, not at all.
Q17. I am lonely at school. No, not at all.
Q18. My teachers expect me to work hard. Yes a lot.
Q19. I behave well in class. No, not much.
Q20. I like having difficult school work to do. No, not at all.
Q21. I like discussing things. No, not much.
Q22. I like using my brain. No, not much.
Q23. I know how to be a good learner. No, not at all.
Q24. Learning is difficult. Yes a lot.
Q25. I'm not good at solving problems. Yes a lot.
Q26. I find school work too difficult for me. Yes a lot.
Q27. I am bored at school. Yes a lot.
Q28. My teacher notices when I have worked hard. No, not much.
Q29. I am happy when I am in school. No, not at all.
Q30. I am on time for lessons. No, not much.
Q31. I like being at school. No, not at all.
Q32. When I get stuck with my work, I can work out what to do next. No, not at all.
Q33. I like having problems to solve. No, not at all.
Q34. I need more help with my work. Yes a lot.
Q35. My teachers tell me when I have done something well. Yes a bit.
Q36. I feel safe when I am in school. Yes a bit.
Q37. I get into trouble during breaks or lunchtimes. No, not much.
Q38. Learning new things is easy for me. No, not at all.
Q39. I know the meaning of a lot of words. No, not much.
Q40. I like my teachers. No, not much.
Q41. I feel I belong to this school. No, not much.
Q42. I am clever. No, not much.
Q43. I make mistakes with my work. Yes a lot.
Q44. Working hard in school will help me in the future. No, not much.
Q45. The work I have to do in class is too easy. No, not at all.
Q46. Thinking carefully about your work helps you do it better. No, not much.
Q47. I get anxious when I have to do new work. Yes a lot.
Q49. I can do my homework easily. No, not at all.
Q50. When I'm given new work to do, I feel confident I can do it. Yes a bit.

Figure 17. Sample PASS summary report.
4.9.1.3 Quantitative Data Analysis

Quantitative data was prepared for analysis by the scoring and coding of outcome measures. Data was entered into the statistical package for social science programme, version 18 (SPSS, Inc., Chicago) by the researcher.

4.9.1.3.1 Distribution of Data

Before the analysis of the pre and post PASS and SDQ measures can be completed, it was necessary to assess the distribution of the collected data. Parametric tests are used to assess normally distributed data while non-parametric tests can be used to assess non-normally distributed data. For this study, the assumption of normality was tested using the Kolmogorov Smirnov/Shapiro Wilks test. A non-significant result (sig. value of more than .05) indicates normality. The null hypothesis assumes that there will be no statistically significant change in the students’ scores after completing the intervention. Statistical significance for both of these tests is determined by the probability (p) value found in the final column of the results tables under Sig. (2-tailed). If the value is less than 0.05, it can be concluded that there is statistical significance between the two scores and the null hypothesis is rejected. If the score is more than 0.05, the null hypothesis remains. The results of these tests are reported in the Results Chapter.
4.9.2 Qualitative Methods: Research Objectives 1 & 3

The first and third study objectives utilise qualitative data to uncover understanding of the practice development process.

Rationale

The recommendation for the Movement Matters Programme arose from research with teachers, students and occupational therapists on the adapted Alert Programme (NBSS, 2015b). Some Level 3 students might benefit from more intense movement and proprioceptive inputs in order to support their self-regulation. Thus, the context of the study has been impacted by student and teacher involvement in the adapted Alert Programme. Therefore, in order to study the development of the Movement Matters Programme, its emergence from earlier practice will be described and critiqued.

Objective One

The first objective aims to describe and critique the process of developing the Movement Matters Programme in the context area. This description and critique is an important qualitative process as it adds credibility to the study by providing the foundation for the study's significance and relationship to practice (Boswell and Cannon, 2011). It informs the overall aim of the study by establishing if and how practice adheres to the vision for the NBSS occupational therapy service as outlined by MacCobb (2012) (Appendix 2B). It was decided that this vision provided a framework for measurement and critique of emerging practice in the context area.

4.9.2.1 Framework for Collecting the Qualitative Data: Objective One

Documentation relating to the NBSS occupational therapy interventions including manuals, training notes, reports, peer reviewed papers, book chapters and information leaflets published on the Department of Education/ NBSS website and in international peer reviewed publications between 2011 and 2017 was collected.
4.9.2.2 Collecting the Qualitative Data: Objective One

The following published documentation was used as sources of data. This list below is presented in chronological order.

1. NBSS Occupational Therapy in the School Setting Information Leaflet (Fitzgerald et al., 2011) (Appendix 2A).
   - The first information leaflet for teachers published on the NBSS website describing the role of occupational therapy in the post primary school setting.

   - This is the first publication describing the collaboration between the Discipline of Occupational Therapy, Trinity College Dublin and the National Behaviour Support Service (NBSS). It demonstrates that collaboration between professionals, students and parents can enable those of social disadvantage with significant behaviour problems participate better in school. It was published as a chapter in a book promoting inclusion in mainstream schools for students with social emotional and behavioural difficulties.

3. The Adapted Alert Programme Teacher Manual (Appendix 2C).
   - This is the manual that teachers receive on the training days provided by the NBSS occupational therapists and is published by the Irish Department of Education. This manual is the most up to date version and is the product of years of inter-professional collaboration with teachers shaping the content based on their practice experience.

   - This article, published in an international peer reviewed journal reports on Phase 1 of the adapted Alert Programme pilot with challenging class groups led by occupational therapists. The journal aims to contribute to the reader’s understanding of SEBD and their knowledge of appropriate ways of preventing and responding to EBDs, in terms of intervention and policy. The journal’s audience is primarily teachers in mainstream and special school settings and other professionals working in educational, medical and psychiatric settings. The positive results of this study led to Phase 2 of the pilot in which teachers took the lead role with occupational therapy support.
5. Students with Social, Emotional and Behavioural Difficulties: The Alert Programme Trial in Post-Primary Schools (MacCobb et al., 2014b) (Appendix 2E).
   - This article, published in an international peer reviewed journal also reports on Phase 1 of the adapted Alert Programme but the target audience is occupational therapists. The article aims to influence occupational therapy practice in schools by recommending a whole school approach involving collaborative consultation between therapist, teachers and school management.

   - This report published by the Irish Department of Education on the NBSS website outlines the results of Phase 2 of the adapted Alert Programme in which teachers took the lead role with occupational therapy support. The report’s target audience is teachers working with students with SEBD and concludes that the adapted Alert Programme contributed to the development and enhancement of classroom management strategies for supporting students’ self-regulation.

7. The Movement Matters Programme Teacher Training notes (Appendix 2G).
   - The notes provided to teachers when receiving training in the Movement Matters Programme that describes the theory informing the development of the intervention.

   - The session plans for the entire Movement Matters Programme that teachers take back to their schools. Teachers are coached through each of the session plans during the one-day training provided by the NBSS occupational therapists.

   - This report published by the Irish Department of Education on the NBSS website outlines the results of the first pilot of the Movement Matters Programme. The report’s target audience is teachers working with students with SEBD and concludes that the programme is an effective intervention for young people who experience difficulties staying on task in the classroom.

    - This information leaflet written by NBSS occupational therapists, published by the Irish Department of Education targeting mainstream teachers aims to inform
them about the importance of self-regulation to learning and wellbeing and how the Alert Programme concepts can support their current teaching practice.

   - This article, published in an international peer reviewed journal targeting occupational therapists describes the process of adopting a scholarship of practice approach with teachers to generate evidence for practice in mainstream post primary school settings with students with SEBD. The practice described in the paper is the evolution of the adapted Alert Programme leading to the development of the Movement Matters Programme.

   - This report, published on the website of the National Council for Curriculum and Assessment (NCCA), a statutory body of the Department of Education and Skills, provides guidelines to schools for planning and developing a coherent Wellbeing programme. The adapted Alert Programme is now being delivered by teachers as part of this curriculum. The Appendix contains pages 1-23 of this extensive report.
4.9.2.3 Qualitative Data Analysis: Objective One

The publications were reviewed in chronological order to describe the development of the Movement Matters Programme within the NBSS service delivery model. A decision was made to use matrix analysis (Averill, 2002), as a method of critiquing this documentation on practice.

In qualitative data analysis, a matrix involves the crossing of two or more main dimensions to see how they interact (Miles and Huberman, 1994). Matrices can be descriptive and process-oriented and can be valuable tools in the search for relationships between categories of data (Averill, 2002). Table 7 below is the template for the matrix analysis applied to the process of developing the Movement Matters Programme as a progression of the adapted Alert Programme.

**Table 7. Matrix Template**

<table>
<thead>
<tr>
<th>Occupational therapy vision (MacCobb, 2012)</th>
<th>Timeline of programme development</th>
<th>Content of programme (manual &amp; resources)</th>
<th>Application in practice setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person centred</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation focused</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative relationships</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Context appropriate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The vertical column on the left are the core occupational therapy constructs on health and wellbeing which make up the vision for the NBSS occupational therapy service as outlined by MacCobb (2012) after the first feasibility study in the setting. The horizontal column on top refer to the timeline of major developments, the content of the programme’s manuals, training notes and resources and finally the application on the programmes in the practice settings.
setting. Analysing the data with a matrix allows for the crossing of these dimensions to see how they interacted with the 5 occupational therapy values of person centeredness, occupation focused, collaborative relationships, context appropriate, and environment and consequently draw conclusions. The content of the matrix was reviewed by an occupational therapist colleague who was familiar with the published data and was not involved in the development of the Movement Matters Programme or in its research.

The critiquing process involved reviewing the twelve documented data sources, and marking in the relevant intersections when examples of practice evidence that adheres to the five core occupational therapy perspectives on health and wellbeing as outlined by MacCobb (2012) were seen. The data presented in the matrices is intended to be most relevant rather than comprehensive for ease of reading.
Objective Three

A qualitative method was adopted to study the clinical reasoning skills of the two participating occupational therapists because the profession is “more interested in how therapists “think in action” rather than diagnose” (Unsworth, 2008, p.375). Clinical reasoning is a cognitive process that cannot be studied directly and quantified but rather needs to be described and analysed to be understood. This is an information processing approach to data gathering and analysis which views human cognition as a “sequence of internal states successively transformed by a series of information processes” (Ericsson and Simon, 1993, p.11) and is the basis for most studies of clinical reasoning today.

4.9.2.4 Framework for Collecting Qualitative Data: Objective Three

The clinical reasoning data was collected over the course of a 12 month period in three semi structured group interviews guided by a phenomenological approach. Each interviewed lasted approximately one hour. A phenomenological study attempts to understand reality from the perspective of the participants in their natural environment (Morse and Field, 1995). In this approach, the researcher can be an involved participant as documented in the clinical reasoning research of Mattingly and Fleming (1994). Semi structured interviews have been identified as an effective method of collecting data as they gather rich descriptions of the therapist’s experiences to gain deep understanding of what these experiences mean (Morse and Field, 1995). This attempt to understand the ‘insider’ perspective is known as the ‘emic’ perspective in qualitative research (Morris et al., 1999). This approach to data collection approximates closely to what Schon (1983) describes as ‘reflection-on-action’ which is a retrospective analysis on the therapist’s part of what occurred away from, in terms of time and outside of, in terms of context, the school setting. This method of collecting data relating to the clinical reasoning of occupational therapists is evident in the literature (Hutton, 2008). That study highlighted how this ‘reflection-on-action’ led to the generation of new knowledge and understanding on the part of the therapists. The data was collected during a single semi structured group interview with occupational therapists who were close, long standing colleagues of the researcher. This may have facilitated the openness of the therapists during the interview leading to in-depth reflections according to the author.

As the third research objective attempts to understand the ‘insider’ or ‘emic’ perspective (Morris et al., 1999) with the researcher as a major contributor of data, autoethnography can uncover new knowledge drawn from the lived experience of the researcher himself. Autoethnography is a research method that uses a researcher’s personal experience in
the form of narrative accounts to describe and critique cultural beliefs, practices and experiences. Autoethnography can take the form of in-depth interviewing and reflexive accounts, both of which feature prominently in this study, with the analysis of data involving interpretation on the part of the researcher (Hammersley, 1990; Genzuk, 2003). Autoethnography is a good fit within the study’s methodology as it acknowledges and values the researcher’s relationship with others and reflects people in the process of figuring out what to do (Adams, 2015). ‘Figuring out what to do’ could be considered to be the essence of clinical reasoning for occupational therapists, particularly in an emerging practice context such as is described in this study. Autoethnography embraces and foregrounds the researcher's subjectivity rather than attempting to limit it, as in empirical research. These characteristics of autoethnography are important within this study’s design as the researcher is a major participant and contributor of data along side his close colleagues of many years which raises questions about the reliability of the data produced. The literature shows evidence of similar approaches to researching one’s own organisation or ‘backyard’ as Glesne and Peshkin (1992) put it. Such studies explore the autoethnographer as a researcher doing scholarly work while working in Higher Education (Sambrook, Stewart, & Roberts, 2008; Doloriert & Sambrook, 2009, 2011). Richardson (2000) proposes the following five factors when reviewing and evaluating personal narrative pieces of work.

1. “Substantive contribution. Does the piece contribute to our understanding of social life? 
2. Aesthetic merit. Does this piece succeed aesthetically? Is the text artistically shaped, satisfyingly complex, and not boring? 
3. Reflexivity. How did the author come to write this text? How has the author's subjectivity been both a producer and a product of this text? 
4. Impactfulness. Does this affect me emotionally and/or intellectually? Does it generate new questions or move me to action? 
5. Expresses a reality. Does this text embody a fleshed out sense of lived experience?” (p.15).

4.9.2.5 Collecting the Qualitative Data: Objective Three

Ericsson and Simon (1993) describe three different levels at which subjects may verbalize thought processes and their content. Level 3 verbalisations refers to requests to verbalize specific information such as explanations or reasons. It requires the participants not only to articulate current ideas and hypotheses but to link these with stored thoughts and
information which can in turn lead to a change in the participant’s cognitive processes and subsequent practice.

Participants

The participants in these semi structured group interviews were the two occupational therapists from the Movement Matters team, one of which is the researcher. The other participant occupational therapist was a colleague who had contributed to the development of this and earlier programmes, and had an expertise and post graduate qualification in sensory integration interventions. A third individual, the Physical Education Teacher who designed the programme with the occupational therapists was invited to participate in the interviews by the appointed gatekeeper but declined. The group interviews were facilitated by the coordinator of the occupational therapy service, who was also an academic in occupational therapy. The role of the facilitator was to initiate discussion amongst the two participating occupational therapists with questions based on themes agreed upon previously between the researcher and the facilitator. The facilitator then acted as an observer and posed any additional questions she considered would result in deeper understanding of a topic being discussed.

Interview Content

The first semi structured group interview was guided by themes developed by the researcher and the facilitator. The facilitator was free to ask questions in her own words and style.

Questions asked by the facilitator in Interview #1 (December 2014)

1. Tell us about how the Movement Matters Programme emerged and how you thought that this would be something that would be valuable.

2. How did you apply your understanding of the students and their needs in conceiving of the programme?

3. Tell us more about your commitment to movement and the relationship you’re establishing by actually doing it and not just saying it…the working together.

4. So with the teachers buy in from the Alert Programme, how did you then propose to apply a sensory integrative perspective?

5. When did you actually design the programme?
6. What actually happens in the programme?

The second and third semi structured group interviews were guided by the content of the preceding interview. For example, the researcher transcribed the first interview and then analysed the content. Thematic analysis identified the broad themes that ran throughout the interview and content analysis then divided the transcribed data into topic areas under the broad themes resulting in a clear visual of the interview content from which the facilitator could then develop relevant themes for the next interview that built on the data from the previous one. This sequential process of one group interview influencing the content of the next can be observed in Figure 17 below.
Figure 18. The sequential process of thematic development influencing each subsequent group interview.
Questions asked by the facilitator in Interview #2 (May 2015)

1. Could you recap on the background and the theories behind the programme?
2. Could you describe the timeline of development since 2013?
3. What about the structure of the programme and the structural changes carried out over time?
4. What's reflected in how you plan the structure of the sessions? Is this built on theories of early child/motor development to start with?
5. What's required from a fidelity point of view in terms of number of sessions and frequency and intensity?
6. What sort of changes in the overall structure have been carried out?
7. In terms of ongoing reflections for the occupational therapists, do you keep notes? Do you talk to each other? How do you keep track of experiences?

Questions asked by the facilitator in Interview #3 (December 2015)

1. Acknowledging the research that's been reported on in the 1st pilot study of Movement Matters since our last interview, have you changed any of the structure or content?
2. So it’s a year since we began our reflections, are there other themes emerging from your practice that are standing out now?
3. From your consultations with experienced teachers, how are they now seeing the value of the programme?
4. From a student perspective, how is the programme being integrated into their student behaviour plan?
5. How are you capturing changes and implications for the students?
6. What skills do you now think that the programme is offering students that you mightn’t have foreseen?
7. Tell me more about your reflective processes as professionals.
4.9.2.6 Qualitative Data Analysis: Objective Three

The method of Interpretative Phenomenological Analysis (IPA) (Smith et al., 2009) influenced analysis of the data collected in the semi structured group interviews. IPA combines a dedication to understanding the 'lived' experience of the participant with a belief that to achieve such understanding requires interpretative work on the part of the researcher and it offers a systematic approach to doing this (Smith & Osborn, 2003). This integration of the researcher's interpretations compliments the reflexive approach as described by Finlay (1998) at the beginning of this chapter, where the researcher's subjectivity is considered a strength particularly within qualitative research. The IPA method is committed to idiographic inquiry (Lamiell, 1987; Smith, Harre, & Van Langenhove, 1995; Smith 2004) where each case (interview) is examined in great detail as an entity in its own right before a move to more general claims are made in a narrative account that includes detailed extracts from the individual participants' accounts. IPA is particularly useful where the topic under study is dynamic, contextual and subjective, relatively under-studied and where issues relating to identity, the self and sense-making are important (Smith et al., 2009). IPA has been found to be an effective method of studying the experience of health professionals (Carradice et al., 2002, Michie et al., 2004). Clarke (2009) recommends IPA as a useful method for aiding occupational therapists in understanding the link between occupation and health and well-being. IPA can help occupational therapists develop deeper understanding of the experience of colleagues which facilitates reflection on practice which can lead to enhanced service provision (Clarke, 2009). Phenomenology strongly influences the IPA method and is a good fit with occupational therapy philosophy on client uniqueness and context specific knowledge.

Quinn & Clare (2008) explain that there is no rigidly defined way of conducting IPA but propose the following seven stage model of analysis.

**Seven Stage Model of IPA (Quinn & Clare, 2008)**

**Stage one:** Reading the transcript.

1. The researcher also transcribed each interview. This has been identified as worthwhile as it helps with familiarisation with the data (Rapley, 2007).
Stage two: Making Margin notes.

2. Relevant pieces of transcript were highlighted and the researcher's initial thoughts were marked beside each section that would later evolve into thematic areas.

Stage three: Summary list of margin notes.

3. After reading and making initial margin notes, the researcher reviewed the entire transcript and began listing the notes made. Common themes began to emerge at this stage.

Stage four: Grouping of margin notes into thematic areas.

4. At this point, I began to transfer the sections of text relating to major themes into a table system on Microsoft word so that I could begin to visually organise the data under each emerging theme.

Stage five: Left margin codes.

5. As deeper interpretations began to emerge from the major themes after revisiting the data frequently, these interpretations were assigned codes initially that soon developed into subthemes in their own right. A sample of the table system with the 'left margin codes/themes' and the right margin 'interpretations' can be seen below.
### Table 8. Sample table of qualitative data analysis influenced by IPA

<table>
<thead>
<tr>
<th>Code/theme</th>
<th>Data</th>
<th>D</th>
<th>L</th>
<th>Conceptual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Movement as a tool</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ we were running interpersonal skills groups in kinda, sports hall type facilities in the schools, working around kinda increasing kinda cooperation skills, participation skills, amongst mostly first year students who had social, emotional, behavioural difficulties, on a lot and you know, from observing them in class there would have been a lot of movement going on in class that was causing difficulties for teachers to deal with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ it was only ever used as to that medium, it never was a goal, we never used movement ever as a goal in itself, it was only ever, if you look at any of our objectives and all of our group work it is never ever, whilst it was an interest, it was an integral part of it, it was never an aim or an objective at any one stage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ it was merely a means to an end, it was a, a really kind of, the core strength and kind of, kind of the organisation of movement, was just, just kind of a, well it was just sort of a double whammy really wasn’t it</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ we still had our aims and our objectives for each session were not around movement, they were around you know the social inclusion, so we used movement and look, the other pieces, and you know, give</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Stage six:** Full listing of theme summaries.

6. After prolonged immersion in the transcript, the raw data was divided and assigned to specific subthemes under an overarching major theme. This involved frequent revisiting and reorganisation over time and was also influenced by the researcher’s reading for the literature review where topics such as trauma, attachment and co-regulation were being explored.

**Stage seven:** Grouping of theme summaries.

7. The data from the three interviews was finally grouped into major themes and subthemes and displayed in flowcharts for ease of reading and study. These are displayed in the Results Chapter with each accompanied by the raw data of the occupational therapists’ clinical reasoning that tells the story of the practice development in the setting.

8. Both stages 6 and 7 were revisited frequently in the final year of the study before the researcher was satisfied that the themes reported reflected accurately the clinical reasoning of the participating clinicians.

9. The final step of this stage was to triangulate data gathered from Objective 1 and Objective 3 in order to establish whether the five core principles of occupational therapy were evident in the clinical reasoning data and whether this practice was reflective of practice development culture described by Manley, McCormack &
4.9.2.7 Role of the Researcher in the Qualitative Aspects of the Study

Qualitative research is interpretative research, with the inquirer typically involved in a sustained and intensive experience with participants (Creswell, 2009). The researcher can also be an involved participant as documented in the clinical reasoning research of Mattingly and Fleming (1994). These relationships and experiences raises a number of strategic, ethical and personal issues into the research process (Locke et al., 2007). Creswell (2014) emphasises the importance of the researcher explicitly identifying their biases, values and personal background that may shape their interpretations formed during a study. Reflexive accounts from the researcher outlined at the beginning and end of the Methodology chapters demonstrate awareness of the researchers’ biases and perspectives.

Glesne and Peshkin (1992) refer to ‘backyard’ research which involves studying researcher’s own organisation or friends or immediate work setting. In such a case, the information may be easy to collect but may be not be accurate. The researcher must therefore take steps to ensure validity to demonstrate the accuracy of the information. There is a tone in these statements that the researcher’s influence in the generation of knowledge is a threat to a study’s rigour and relevance. However, Finlay (1998) and Dickie (2003) propose that the subjectivity of the researcher can be exploited as a strength within a study. In this study, this subjectivity is evident in the researcher’s adoption of ‘personal and methodological reflexivity’ as described in the Methodology and Results chapters. In addition, the influence of the IPA method of analysing the qualitative data outlined earlier considers the researcher’s interpretations as a core part of the process of uncovering new understandings and insights. Finlay (2006) contend that qualitative studies can be rigorous by showing evidence of systematic work and relevant by the research’s contribution to the profession. As two data sources were used, and the interviews were fully documented allows for confidence in the interpretations reported.

4.9.2.8 Rigour and Validity

Rigour in qualitative research is often measured by actions such as debriefing, member checking, triangulating and consideration of concepts such as researcher bias and validity. Some authors express scepticism regarding the value of such steps and question their
contribution to establishing the truth of findings. Dickie (2003) contends that member checks are not relevant in all qualitative research and reminds us that there is a “responsibility to interpret the data that ultimately rests with the researcher” (p.55). This is particularly relevant in this study as the qualitative data relates to the reflections of the researcher and his colleague on their practice and clinical reasoning. Out of professional courtesy, each interview transcript and initial themes were sent to the second participating occupational therapist soon after completion with an open invitation for commentary. None was provided and the participant was satisfied with what was being documented.

Validity in research relates to the accuracy of what is being investigated. This criterion rests upon the assumption that the phenomenon being investigated possesses reality in an undisputed, objective sense (Finlay, 2006). The pragmatic paradigm does not adhere to such a view and would contend that analysis can only be presented as a “tentative statement opening upon a limitless field of possible interpretations” (Churchill, 2000, p.164). Lincoln and Guba (1985) proposed that trustworthiness be a more appropriate term for validity in qualitative research and credibility replace internal validity and transferability replace external validity. The qualitative aspect of this study could be deemed to have a high level of credibility (degree to which findings make sense), as the researcher is an expert in the data as he was one of the participants. Credibility is also built through prolonged engagement in the field. Transferability is achieved in a study through detailed portrayal of the setting allowing the reader to judge the applicability of the findings to other settings. This replaces random sampling and probabilistic reasoning associated with external validity in positivist research. This study includes a chapter designated to thick descriptions of the context and setting. Finally, the researcher’s central role as a participant suggests bias as a factor in the findings. Frank (1997) does not consider this a flaw of research but rather considers that the “challenge is not to eliminate bias to be more neutral, but to use it as a focus for more intense insight” (p.89).
4.10 Reflexivity

I opened the Methodology Chapter with reference to reflexivity to acknowledge the “central position of the researcher in the construction of knowledge” (Banister et al., 1994, p.151). This approach encourages disciplined self-reflection and continuous evaluation of the method of research. Reflexivity embraces subjectivity as an opportunity to uncover rich understandings within the area being studied. Guided by these principles, a reflexive account in the first person will follow describing the author’s journey from practitioner to researcher.

4.10.1 The ‘Research Journey’

I described my anxiety in Chapter 4 when embarking on this journey from practitioner to researcher, in particular in relation to choosing a methodology that would deliver the understanding I was hoping to uncover. There were a number of factors that contributed to pushing my thinking and reflection about my bias, lack of knowledge on research methods and philosophy through a process of academic development as a researcher. The main contributor to this process was my research co-supervisor who was based in the UK and completely removed from the practice context and did not know me personally. I believe this independent and analytical voice provided a more critical perspective on my work than my main supervisor who may have had inherent biases as she was the coordinator of the occupational therapy service under study and had a long professional relationship with me, the researcher. The main methods that challenged and developed my academic thinking were detailed note taking during the consultation ‘Skype’ calls with the co-supervisor in the UK (Appendix 1B) and an immersion in the literature related to the ‘nature of knowledge’ and how knowledge is perceived by different research epistemologies.

4.10.2 Researcher and Participant

To the forefront in my mind at all times was my role as a researcher and a participant within the study as well as my close professional relationship with the second contributor of data in the interviews and also with the coordinator of the NBSS occupational therapy service who was acting as my research supervisor. I recognised that this was not the typical position to be in as a researcher embarking on a PhD study journey. However I found reassurance in reviewing the literature related to clinical reasoning studies in occupational therapy (Hutton, 2011; Kielhofner, 2006) and methods within qualitative research (Banister
et al., 1994) that emphasised the advantages of the researcher being centrally positioned in the collection and analysis of data within his or her practice environment. By embracing the subjectivity of the forums in which the qualitative data was being collected, I was able to leave my ‘researcher hat’ at the door and engage fully in the semi structured group interviews as a research participant. At the time of the semi structured group interviews, the research outcomes from the feasibility study of Movement Matters had been published which suggested that the programme was suitable for the setting and deemed effective by the students and teachers as a self-regulation tool and as a method to develop positive behaviour for learning skills. The participants therefore had no ‘vested interest’ in coming to positive conclusions about the programme as this had already been established by the independent researcher from the Department of Education. The focus of the semi structured group interviews was always on the practice development journey of the NBSS occupational therapists which involved five years of practice and numerous interventions and programmes. The goal was to document our clinical reasoning and understand how the Movement Matters programme emerged as a new practice tool within the emerging area as well as our current practice related experiences and reflections at the time of the interviews. While accounts of how the programme was being successfully used in practice by teachers and students naturally emerged during the course of the three hours of conversation, this was not the focus of the interviews, nor would it be considered ‘reliable’ from scientific standpoint. I was aware that the goal of the semi structured interviews was to ‘reflect-on action’ as described by Schön (1983) and record my clinical reasoning in response to open ended questions. It was not an efficacy study aiming to prove the ‘effect’ of a programme that I had been involved in designing. I was reading widely during the course of the data collection period and had come to understand that my voice was a valid and potentially rich source of data within the pragmatic and interpretive paradigms as long as reflexivity and transparency were evident throughout the study. I was comfortable with the vision that my research was not necessarily about reporting clinically or statistically significant findings as a conclusion, but rather that the contribution to the profession would be the rich reflections and recommendations related to developing occupational therapy practice in an emerging context.

My relationship with the coordinator of the NBSS occupational therapy service who is also my research supervisor is important to acknowledge. As previously stated, I sought advice and direction from an independent academic in another country who had publications in the area of school practice in the form of critical conversations approximately every 3 months. I also sent drafts of text I was working on for critical feedback. I did this on the
advice of my primary supervisor as we recognised that we both held passionate views on the work under study and required an ‘analytical eye’ to ensure that the integrity of the work was protected. While my supervisor facilitated the clinical reasoning discussions through the semi structured group interviews, she took no notes, nor had any involvement in the analysis of the data. Her role was to draw on her extensive academic career to pose questions that would elicit detailed reflections from the participants. Transparency in this regard is ensured with the inclusion of the interview transcripts in the appendices where the reader can observe the amount and nature of the questioning from the facilitator. There are also power dynamics to consider. I was at all times conscious that this was not a ‘conventional’ way of gathering data. I was however accustomed to the unconventional. The nature of our work in schools in the years preceding the interviews would have been considered ground-breaking yet somewhat unconventional within the profession. Breaking ground in new practice areas by its nature requires that conventions take a back seat as experimentation and discovery is documented and reported. I at no point felt pressurised to provide answers to the questions that were posed that would please the facilitator. While I have described my supervisor as an ‘academic champion’ previously, my practice was not under her direction where her ideas and practice proposals were expected to be accepted and implemented without question. Critical debate and argument were a common occurrence within the NBSS occupational therapy team with strong opposing views on matters at times and a strong sense of ‘practitioner autonomy’ over ‘academic dictatorship’. This promoted a culture of practice innovation and freedom under an overarching academic supervision structure. I was reassured by the clinical reasoning literature that ‘reflection-on action’ studies involving the researcher and his/her team could contribute to rich data and intense insights. While this data is openly subjective in nature, steps to ensure transparency through detailed context description and reflexive accounts such as this allows the reader to determine the relevance of the data to their own practice context.

4.10.3 Reviewing themes

The initial approach to theming the semi structured group interviews was interview by interview. This involved transcribing the interview immediately after recording it and then theming it guided by the IPA method as described by Quinn and Clare (2008) in the Methodology Chapter. Thus the themes were decided in the same time line as the data gathering meaning that the first interview was a year previous to the last. However, on completion of the data gathering, a re-immersing in the literature and data set as a whole
clarified my interpretations of the themes made a year previously. Transcribing and theming the interviews immediately after their recording allowed me to immerse myself in the data straight away and record my interpretations straight away. By doing this also provided me the time to develop my academic and philosophical thinking and revisit the themes a year later for re-interpretation. This was not a planned strategy but rather a fortunate product of diligence.

4.10.4 Refining the study aim

My understanding of the aim of the study developed dramatically from the first year of the project in comparison to now as I conclude this three and a half year process. I began the research journey viewing the research project more like an 'efficacy study', with a specific focus on the Movement Matters Programme, hoping to prove its worth as an intervention in the setting. Following immersion in research methodology literature and critical discussions with my supervisors, an understanding of the value of the data emerged. This data held the story of valuable practice development knowledge in a setting and with a population that is underserved in existing occupational therapy literature. The challenge was then to develop a method of collecting, analysing and reporting this valuable data in order that this new knowledge could be uncovered.

In relation to the quantitative measures and clinical reasoning data, I came to understand that I was collecting this data 'in parallel' rather than converging it as is the traditional way in an embedded mixed method design. Collecting and analysing the data in parallel facilitated a 'positivistic' understanding of the value of the Movement Matters Programme and a pragmatic understanding of the process of its development. This new knowledge offers something to a multifaceted, inter-professional collaboration for evidence, so that resources are well used to support students.

A number of experiences contributed to this refinement of the aim and objectives of the study. The 'continuation process' during my second year of study where I presented my study progress to a panel of examiners who came from the positivist perspective pushed me to think more critically about what I was aiming to uncover with my data and to ensure that I was satisfying the positivist demand for rigour. Submitting a paper to an academic journal in October 2015 and processing the comments of the reviewers and journal editor over the review procedure was hugely beneficial in refining my thinking in relation to the qualitative data and the emergence of the scholarship of practice method of knowledge generation as a major aspect of my findings.
4.10.5 So what?

The research journey has enabled a clearer understanding of the data collected and how it fits within the literature on social emotional and behavioural difficulties and how occupational therapists generate new knowledge from, and for practice.
4.11 Chapter Summary

This chapter has described the methods by which this study was carried out. The chapter opened with reference to how reflexivity can be central in the construction of knowledge in particular when the researcher is exploring their own practice context as rich understandings can be uncovered due to their unique perspective. It was outlined that the study is guided by the pragmatic worldview which in turn influenced the selection of the mixed method design which involves the use of both quantitative and qualitative methods.

The quantitative methods aim to address the second objective of this study which is to analyse student attitudinal and behavioural measures before and after participating in the Movement Matters programme, specifically the Strengths and Difficulties Questionnaire (SDQ) and Pupil Attitude to Self and School measure (PASS).

The qualitative aspect of the mixed method design reports on the matrix analysis of the development process of the occupational therapy service and the Alert and Movement Matters programmes. It also focuses on the clinical reasoning processes of the developers of the Movement Matters Programme where the data was collected over the course of a 12 month period in three semi structured group interviews guided by a phenomenological approach. The methods of analysing the mixed method data was described and the role of the researcher and issues regarding the rigour of qualitative data were also discussed. The chapter concludes with another piece of reflexive writing from the researcher in relation to his position within the generation and analysis of data for the study.

Chapter 4 that follows reports the results of the data gathered and analysed in three parts to reflect the mixed methods used and the three study objectives.
5 Chapter 5: Results

5.1 Introduction

This chapter presents the results of the study in three parts to reflect the study objectives outlined in Chapter 3 (Methodology). These objectives intend to inform the overall study aim of understanding the process of developing practice in an emerging context for occupational therapy by focusing on a recently developed programme, ‘Movement Matters’.

Part One presents the results of the first study objective which describes and critiques the process of developing the Movement Matters Programme gleaned from the 12 sources of documentation. Part Two presents the results of second study objective, the analysis of the student attitudinal and behavioural measures before and after completing the Movement Matters programme. Finally, Part Three reports the occupational therapists’ clinical reasoning over the period of study.

All parts of the Results Chapter are guided by subjective interpretations of the data and are discussed in relation to the literature reviewed earlier. Another reason for presenting the results with the interpretations of the researcher is the large volume of data reported and to make sense of the specific findings in situ. The main findings are integrated and synthesised in relation to the existing literature and overall aims of the study in the Discussion Chapter that follows. See Figure 16 below for a reminder of the study aim, objectives and stages of data analysis.
STUDY AIM
To understand the process of developing practice in an emerging context for occupational therapy by focusing on a recently developed programme, ‘Movement Matters’.

OBJECTIVE ONE
To describe and critique the process of developing the Movement Matters Programme in the context area.

OBJECTIVE TWO
To analyse student attitudinal and behavioural measures before and after participating in the Movement Matters Programme.

OBJECTIVE THREE
To map the clinical reasoning process of the occupational therapists who developed and observed the programme in use.

PART ONE
Qualitative data analysis
Step One
Practice Description
Step Two
Practice Critique

PART TWO
Quantitative data analysis
Step One
Student Participant Profile
Step Two
Pre and Post Group Testing

PART THREE
Qualitative data analysis
Interview #1
Interview #2
Interview #3
Figure 16. Study Overview
5.2 Objective One: Description and Critique of Practice Development

5.2.1 Introduction

Part One reports qualitative data generated from the 12 listed documentation sources in the form of description (step one) and critique (step two) of the occupational therapy practice leading to the development of the Movement Matters Programme. This data informs the first study objective contributes to the overall aim of the study by establishing if and how the documentation on practice adheres to the vision for the NBSS occupational therapy service as outlined by MacCobb (2012) after the first feasibility study in the setting.

5.2.2 Step One: Description of Practice Development

By amalgamating the data from the documentation, the following section describes in three phases, the development of the occupational therapy service within the NBSS model of support. It aims to add a context for the development of the Movement Matters Programme emerging from previous work with students and Behaviour for Learning programme teachers in schools. The development of these programmes follows the Medical Research Council’s guidance for developing and evaluating complex interventions outlined in the figure below (Craig et al., 2008, p.8).

![Figure 19. Key elements of the development and evaluation process.](image-url)
5.2.3 Phase One (2008-2011)

The results of the first pilot project between the Discipline of Occupational Therapy, Trinity College Dublin and the National Behaviour Support Service” (MacCobb, 2012), reports on the historical background since September 2008, and describes how the Discipline of Occupational Therapy, Trinity College Dublin was invited to participate in a Level 3 feasibility study with the NBSS to support better participation by identified students in learning and school life. Prior to this, no occupational therapy service was available in these schools. The author also describes the occupational therapy perspective on health and wellbeing and a vision for occupational therapy practice in mainstream post primary schools and students with social emotional and behavioural difficulties.

5.2.3.1 The Occupational Therapy Perspective

The perspective (MacCobb, 2012) has taken was that those presenting with behaviours that inhibited their learning and participation in school were capable and potentially competent learners in the right environment, with appropriate scaffolding, by their own efforts and through their engagement in activities and contexts that were meaningful to them. The second perspective taken was that physical, cultural and social aspects of the environment were also key determinants in eliciting the undesirable behaviours, not just underlying social, emotional and learning difficulties. The author also refers to the centrality of relationships and the need for connectedness (Tronick, 1998) as key influencers on the occupational therapy approach in the setting. It was proposed that through collaboration, the use of various individual and group activities and therapeutic use of self, to support the student’s experience of autonomy, success and belongingness in school which would then transform and bring about change and development in the individual, and in the group (MacCobb, 2012).

Thirty-two students between the ages of 12 and 16 presenting with significant challenging behaviours, attention difficulties and hyperactive behaviours in two school were invited to participate in an intervention tailored to the specific context of their school, class group and their individual needs (MacCobb, 2012). The project worked differently in each school and delivered outcomes specific to each individual and setting. The author explains that “engagement in fun focused group processes supported the experience of inter-subjectivity and peer group learning was actively fostered. Thus, social action and co-construction of shared learning brought students to better connect with themselves and each other resulting in better engagement in school” (p.58). Management and staff
reported satisfaction with the various outcomes, while students reported satisfaction with their changed behaviour. MacCobb (2012) emphasised the importance of inter-disciplinary collaboration with parents, students, teachers and therapists, and while time consuming, it is “effective particularly for students with multiple challenges” (p.73).

5.2.4 Phase Two (2011-2013)

Following this feasibility study, the NBSS initially funded a fulltime occupational therapist position, with the OT contribution to the service ever evolving since. Three occupational therapists now (2018) work within the service’s model of support, providing expertise to 130 partner schools and implementing interventions at each level guided by practice models such as the Person-Environment-Occupation model (Law et al., 1996) and Sensory Integration Theory (Ayres, 1972a, Ayres, 1979a). The ‘Alert Programme’ was identified and developed as a Level 2 intervention in 2011 (MacCobb et al., 2014b, MacCobb et al., 2014a). It was decided that the ‘Alert Programme’ was a suitable intervention to trial in this setting as it has been found to support teachers to develop classroom systems that address the needs of students in a positive manner, affording students the tools to take responsibility over self-regulation (Cahill, 2006). A two phased plan for piloting an adapted version of the programme was put in place with the first phase led by two occupational therapists focusing on developing course content, teaching/learning resource materials and classroom strategies relevant to first year students in an Irish post-primary school context of socio economic disadvantage and students with learning and behavioural challenges. This first feasibility study focused on 85 first year students (aged 12–13 years) and four teachers in four second level partner schools in areas of social disadvantage. At the completion of the trial, formal feedback and review were sought from teachers by a questionnaire designed by the NBSS research team. Questions were asked in an open-ended format on their impressions of the programme; its influence on the students' understanding of their behaviour; the relevance of the self-management strategies taught in the Alert Programme as applied by the students; its integration into the teachers’ class management strategies, and the teachers’ recommended changes to the programme and its delivery in their schools. Students were invited to complete a questionnaire on their views of the programme and their interest in applying their learning (if any) to day-to-day school life (MacCobb et al., 2014a). The results of phase one indicate that students gained an understanding of their own behaviour and applied self-management strategies in class. Participating teachers recommended that all teachers working with the class group should be familiar with the language and
techniques of the programme so as to integrate the strategies into every class session, thereby enhancing environmental supports for better behaviour. They also considered that with training and support from the occupational therapists, the programme could be teacher led (MacCobb et al., 2014a). The second phase aimed to develop training and support systems for the programme to be teacher led and piloted nationally in urban and rural NBSS partner schools.

The national pilot study (NBSS, 2015b) reported on the second phase of the project in which 32 teachers from 17 schools became the lead facilitators following training and weekly support from the NBSS Occupational Therapists. That study set out to capture the teacher and student perspectives on the adapted version of ‘The Alert Programme’ and its perceived relevance for targeted students with social, emotional and behavioural difficulties. Data for the study was gathered through the use of teacher training evaluation forms, a fidelity measuring tool and teacher and student questionnaires. The report concluded that it was a positive learning experience for the 118 students and 32 teachers alike with the programme contributing to the development and enhancement of classroom management strategies for supporting self-regulation in students. From the data provided by the teachers, it was apparent that the programme materials were appropriate for use within the classroom setting within the Irish post primary context, in schools serving areas of social disadvantage. Participating teachers recommended that the Alert Programme be integrated into the whole school experience for all students and that training for the adapted version of the Alert Programme be made available for post-primary school staff who teach in schools in areas of socio economic disadvantage as part of their continuing professional development.

NBSS occupational therapy perspectives on self-regulation and client centred practice as described by MacCobb, (2012) may appear different from the teacher’s value system and practice. However, this approach shares some of the values of ‘Culturally Responsive Classroom Management’ (Gay, 2000) and mindfulness (Miller, 2001) and can therefore be seen to complement existing perceptions. Having completed the programme, teachers reported a deepened understanding of the challenging behaviour presented by many of their students (NBSS, 2015b). This is in keeping with Niehues et al., (1991) who proposed that collaborative practice can play an important role in reframing the views of teachers regarding inconsistencies between students’ performances in school and the expectations held for them. Teachers reported developing an increased knowledge of sensory processing factors affecting student engagement in classroom activities. One interesting
aspect that emerged from the responses was that some teachers stated that the programme has changed their approach towards students with behavioural difficulties. The majority of teachers identified the facilitation of the programme as a professional learning experience which developed their understanding and awareness of the contributing factors to student behaviour such as sensory needs, the effects of the time of day, the effects of classroom organisation, etc. This reframing of the teachers’ perspective of challenging behaviour, which occurred through the collaborative experience of facilitating the Alert Programme with the NBSS occupational therapists, allowed for a proactive view of these students’ challenges and encouraged the implementation of additional, adapted teaching strategies to meet these students’ needs (MacCobb, Fitzgerald & Lanigan-O’Keeffe, 2014).

5.2.5 Phase Three (2013-2015)

The reported findings from phase one and two of the Alert Programme studies and the professional observations and conclusions of the participating teachers and NBSS occupational therapists, concluded that an additional intervention was required in order to serve a proportion of the student population whose needs were not being met by the strategies offered in the Alert Programme or SAQ Special Education Movement (SEM) programme also offered by the NBSS. SAQ/SEM, is based on a system of progressive physical exercises to develop essential motor abilities, balance, co-ordination and ultimately better control of body movement. It involves the teaching of selected motor skills (Speed, Agility, and Quickness), employing the same techniques and protocols used by professional athletes (NBSS, 2015d). This programme was delivered by Physical Education teachers in partner schools with whole class groups of up to 30 students on a weekly basis for the duration of a school term. The relevance of the SAQ/SEM for Level 3 students was not established.

A new programme entitled ‘Movement Matters’ was proposed by members of the NBSS team representing the occupational therapy and teaching professions to support the self-management and learning skills of those students who are described by their teachers as inattentive, fidgety, hyperactive and/or restless in class or who present with behaviours closely associated with Attention Deficit Hyperactivity Disorder (ADHD) or Sensory Modulation Disorder (SMD) (NBSS, 2015d). This new programme was specifically designed for the environmental demands of Behaviour for Learning Programme classrooms in NBSS partner schools as opposed to an ‘off the shelf’ programme such as
SAQ. The Movement Matters Programme was designed as a 20 session programme, run each day for 20 minutes with one or two students as part of an individualised Behaviour for Learning plan (See Movement Matters Manual, Appendix 2H). It consists of a range of activities to build students’ skills and confidence in four key developmental movement categories: Prone Extension; Bi-lateral Integration; Supine Flexion and Postural Control. The short, intense, daily physical activities in the programme aim to not only improve students’ proprioceptive and vestibular sensory systems, but in so doing promote self-regulation of arousal and behaviour and enable them to engage more effectively with their learning during the school day.

Movement Matters was trialled in 11 NBSS partner schools in the 2013/2014 academic year. The NBSS conducted a feasibility study (NBSS, 2015d) to capture teacher and student perceptions of the programme and its applicability to the unique settings in which the NBSS works. For the study, NBSS Behaviour for Learning teachers were provided with in-service training and on-going support to facilitate the testing of the Movement Matters Programme (NBSS, 2015c). The Behaviour for Learning Programme teacher facilitates the planning, implementation and evaluation of effective responses to challenging behaviour at small group/class and/or year group level. The teacher works with identified students, individually or in small groups on Behaviour for Learning Programmes that are designed to meet their social, emotional, positive health & wellbeing and behavioural and academic needs, so they can achieve and succeed in school. An individual Student Behaviour Plan is developed for each student in receipt of this support with Movement Matters being one of many interventions and support programmes used with students. The feasibility study collected data from 32 students and 5 teachers in three ways; a fidelity checklist completed by the teacher after each Movement Matters session, a quantitative and qualitative student survey on ‘Survey Monkey’ and semi structured interviews with two teachers running the programme. This data combined to uncover insights into how the students and teachers involved in the initial trial experienced the programme. Some of the most relevant finding are reported below and the full study report is available in Appendix 2I.

**Teachers’ Fidelity Checklists**

- Across Movement Matters as a whole, 90.5% of the teachers thought that the programme’s objectives had been achieved.
• Overall, 91.7% of the respondents thought that there had been sufficient time within their school timetable to complete all of the activities in Movement Matters.

• Taken across the 20 sessions as a whole, 79.2% of the respondents recorded 100.0% attendance.

• In completing the fidelity checklists teachers were asked to rate students’ progress or their ability to do the activities for each session. The analysis demonstrates that in all but two cases, the students made progress (i.e. from the introductory session to the practice/reinforcement session) in terms of their ability to do the activities. These findings were reiterated in comments made by the teachers in their fidelity checklists. They wrote on many occasions that while students found some activities difficult during the introductory sessions they in most cases experienced success in the practice/reinforcement sessions.

  “Yes, there was a lot for the students to think about because it was new to them but the atmosphere was positive, caring, encouraging, team approach. Both students really enjoyed the session. Session two went very well, improvements in balancing and ladder.”

  “These two sessions went really well. Student A is holding his own always steady, cooperative and tries. Student B has made great progress and has really gained strength and confidence. It’s great to watch.”

  “Student B found the exercises harder. He is quite tall however he did complete the activities with a lot of encouragement from myself and the OT. He has grown in confidence because he has performed really well in some exercises and we can build on this. I am thrilled with the positive effect this programme has on Student B. Fantastic, clever, flexible programme that will certainly help students experience success and therefore open doors for them to experience more.”

• Across the 20 sessions, teachers felt that their students’ participation or willingness to do the activities was good and in some sessions very good. In half of the cases, the students’ participation improved from introductory to practice/reinforcement sessions. The overall positive participation of the cohort of students was reiterated in many of the comments made by the teachers throughout their fidelity checklists. They reported that while many of the students found the activities challenging, they did persevere and expressed their enjoyment of Movement Matters.
“Really lovely to see students laughing, smiling and enjoying a programme that benefits them so much. The student enjoyed using the language associated with Movement Matters and they got very familiar with the four areas very fast.”
“Students wanted to make sure they “get” their session in and approached me yesterday.”

“Absolutely – great resources – I am using a small space but as time goes on I am using my space more efficiently. The students are also getting into a good routine/using the language/taking out and putting away the equipment, etc. Students have a great sense of ownership over the programme. It really is great.”

“Students enjoyed both sessions and returned to classes in a good place.”

- One of the aims of this feasibility study was to measure whether participation in Movement Matters had a calming effect on the students. The analysis of the data comprised working with each data set individually (i.e. pre and post ratings from students, pre and post ratings from Movement Matters teachers and then pre and post ratings from the students’ subject teachers). In all cases there was a significant difference in calmness once the students had completed their Movement Matters activities. Comments made by teachers in their fidelity checklists support these findings. While in some cases teachers identified a need to work with their students on understanding calmness, many remarked how over the course of the programme students became more adept at recognising their levels of calmness.

“Yes. The effect that this programme has had on Student 2, in my opinion, has been excellent. He is a very challenging student and has a lot of OT difficulties. This opinion has been backed by members of our Care Team who have reported that he seems calmer and physically more able to stay seated in class. It must be mentioned also that this student has himself requested to continue with this programme as he is aware that it helps him to stay focused in class.”

“The last few sessions were most enjoyable for both me and the students. Student A has a lot of boxing training behind him and so he performed well in nearly all the activities. The programme has helped him to calm down when stressed. He was most cooperative and engaged really well, he was helpful towards the other student, patient and encouraging towards him.”

“From the students’ feedback it was clear to me that the students recognised the calming effect the programme had on them. The programme naturally encourages
positive feedback that gives students a great sense of pride and achievement when doing the movements. A great self-esteem builder."
Student Survey

- Of those who responded to Question 2 (“Did you enjoy Movement Matters”) all of the students indicated that they did and nearly all (96.6%) stated that they liked doing it every day. This would confirm their teachers’ ratings of their participation or willingness to engage with the programme across the 20 sessions.

- When asked if they would recommend Movement Matters to their friends, 96.6% respondents reported that they would.

- Students were invited to comment about what parts (if any), they liked about Movement Matters. The following is some of their responses (all student data is reported as received including spelling errors/typos).

  “Popcorn exercises, prone extension, rainbow pass, supline flexion.”
  “All of them were grand using the ball prone position.”
  “The ball especially the bowling.”
  “Doing the popcorn exerises.”
  “The balancing on ball work.”
  “It is like getting extra PE. I liked the ladders.”
  “Getting out of class, all the exercises but some were hard. The big ball the games.”
  “The magnet rainbow pass, balancing on the ball and doing things. All the ladder things”
  “Liked it all.”
  “Connect 4, bowling, ladder work.”
  “Stuff for building up the core, press ups, the ladder stuff.”
  “Playing the games on the yoga ball, the ladder.”
  “I liked all the exercises, prone extension. I liked the transformer. The eckky shuffle. I WAS THE BEST AT THAT.”
  “I really liked the games and some of the exercises. I liked getting a break from school work and getting a chance to chat about school.”

- Students were asked what they would change about the programme if anything at all. Of the 26 students who responded to this question, nearly half (46.2%, N=12) said “No” or indicated they could not suggest ways to improve it. The following some of their opinions.
“no because its great the way it is (all activities excellent) However i would like to continue doing it”,
“Do it for longer.”
“I would prefer more on the ball.”
“Use the ball more.”
“Longer.”
“No exercising at the start. cause you would be sore after it.”
“Longer sessions.”
“Do it with your mates.”
“Do more.”
“Add more stuff.”
“Add more levels more warm ups. Different one streching our legs and passing the soccer ball high and low for arms.”
“Outside when the weather is fine.”
“should be made into a double class fot everyone.”
“Make it longer so you don’t have to rush as much.”

- Nearly three quarters (70.0%, N=21) of the students who responded indicated that they felt that doing Movement Matters had helped them to feel calmer in all or most of their other lessons. Over a quarter (26.7%, N=8) stated they felt calmer in all of their lessons.

- Most of the students (77.8%) reported that they felt Movement Matters had helped them with their learning in the classroom. Many of their responses to describe how it had helped them in this area referred to being calmer.

    “Yes was not fidgeting as much in class.”
    “I'm a bit more calm in the classroom.”
    “Yes, was calmer when I went back.”
    “It calmed me down.”
    “It calmed me down more.”
    “Sometimes I feel good from doing it.”
    “I focus on my work.”
    “Calm me down, I was quite.”
    “I got out of class. Keeps you calm.”
    “Yes, I have been listening.”
    “Yes. Didn't get into trouble after doing it.”
“Yes because I was very chilled going back to class.”
“Yes a bit. It makes you focus more when you go back in.”

- Nearly all of the students (92.6%, N=25) indicated that Movement Matters had helped them with their behaviour in the classroom. Many of the responses referred to the way Movement Matters had calmed them down and so their behaviour in lessons had improved with the implication that they were better able to learn skills and subject content during mainstream classes.

  “It improved.”
  “Easier to behave as I was calm.”
  “Good, listen more.”
  “Helped me calm down.”
  “It's a bit more improved.”
  “I can sit still in class more.”
  “Yes I was chilled out.”
  “Yes kind of, it was just easier to relax in class.”
  “It calmed me down.”
  “Better at staying in my chair in class.”
  “Feel better after.”
  “Quieter.”
  “Stop listen and think, got all 1s some days.”
  “Didn’t get into much trouble.”
  “Yes, I don’t go on a mad one.”
  “I was good after doing it.”
  “Was better.”
  “Most days it was good.”
  “Sometimes because it gives you a break from class. I behave better when I go back.”

- Most students (59.3%) indicated that Movement Matters had helped them get along better with other students.

  “I did, people didn't annoy me as much in class.”
  “Yes but I get on with them anyways.”
  “Yes didn’t let them bother me.”
  “Yes, cause I was just more calm and if they annoyed me I just ignored them.”
  “Got on well with (other student) doing it.”
“I have not been suspended in 8 weeks.”

- Over two-thirds of the students (66.7%, N=18) thought that Movement Matters had helped them to get along better with teachers in their school.

  “Was able to concentrate more on what they are saying.”
  “Yes, I did my best.”
  “Yes, cause I was chillaxed and able to listen.”
  “Getting less behaviour notes for messing in class.”
  “Some of them, I’m doing my work.”
  “Got on better with teachers.”
  “Getting on well, not sent to office.”
  “Yes, I was in a better mood after doing a few exercises and I want to carry on doing it.”

Teacher Semi Structured Interviews

Two Behaviour for Learning teachers were interviewed separately at the end of the feasibility study period. Both schools, located in the Dublin region, have been NBSS partner schools since 2007. The schools are co-educational and operate under the DEIS scheme. The schools generally have similar student populations. The following is a flavour of the teachers' perspectives with the full case studies available to view in study report (NBSS, 2015d) (Appendix 2I).

- ‘Teacher A’ felt that the timing of the programme was crucial. Despite the occupational therapist’s advice to run the programme in-between two mainstream lessons, she decided to implement the programme at the start of the school day. Her decision was based on a number of factors. She spoke about how having Movement Matters first thing in the morning motivated her students to come to school. She also thought that because the programme ensures that students experience success that taking part in Movement Matters at the start of the day would provide students with positive support to handle their subsequent mainstream lessons.

  “…the first in the morning just settled them and it gave them time to do that…and they were ready and they loved coming in, they loved coming into school because they knew that they had the movement first.”

  “…if you can start their day off with a sense of success and where they can talk about things. And they would be coming in on a Monday after having a weekend
where they might have been engaging in all kinds of things and so they would come into you and say I am wrecked and so you would be getting up their levels of confidence.”

“And so a lot of the students would come in in the morning and be like we don’t want to be here and so on …it is kind of all negative and they are going in with that, you know. So if you can get them within the first three periods it is how they will start their day and that is the key.”

‘Teacher A’ emphasised the immediate achievement gained by the students in doing the Movement Matters programme content. She expanded on this element of Movement Matters in contrast to other programmes as follows:

“I have some students who are very, very weak academically, their reading would be way off the spectrum, not measurable. So every day they came in here, every day they don’t achieve a level of success in classes…but starting with the Movement they could achieve a level of success…So it started their day off…it just made a complete difference to them. That was something that came out of it…they could really see their success. There are other programmes, there are lots of programmes that you have but this is instant success…and it is real success in their lives. It is ‘Yes, I can run through the ladder’ or ‘Yes, I can do the Connect’. It is instant success as opposed to ‘Yeah, okay I read to the end of that or something’ and that is just another day and you had the teacher telling you, the teacher helping you to do it, but this was something that they did on their own. And they got that success on their own. So they were good at something.”

‘Teacher A’ also went on to describe how other teachers had heard about the programme and demonstrated an interest in learning more about Movement Matters. When asked whether her teaching colleagues had noticed any changes in the students from doing the programme, she explained:

“They thought it was great. They said you know why hasn’t somebody thought of this before… They said that the students changed, they seemed happier …now I am not going to say that they went in and remained quiet for the whole lesson, but they went in and engaged in a more positive way than they would have engaged previously.”

‘Teacher B’ also had a very positive experience teaching Movement Matters and was interested in extending it beyond NBSS Level 3 support. Having worked as a
Behaviour for Learning teacher, ‘Teacher B’ has implemented a range of interventions and programmes with his students. He noticed that with some of his students, Movement Matters had produced greater effects than previous interventions.

“…from a behavioural point of view found it fantastic as in one of the students I was working with …I have worked with him for two years now and I have done various different interventions, Crucial Skills…and while we had some success with him the success we had with him when we did this was unbelievable. The difference in the child…the way he reacted in class, how he was able to settle and it wasn’t just the fact that he was coming in and he liked doing it…it definitely made a difference. Teachers were coming back and saying to me how he was more focused, that he was actually getting involved, that he wasn’t just being quiet for the sake of just getting the mark to be able to come back in, he was engaging more with it, with the lessons even when he had the class after the Movement Matters or before, that would usually be a class that he would get in trouble in, he was engaging in class, he was answering questions, he was doing the bit of homework, he was interacting with the other kids…so from that point of view it really, really made a difference.”

‘Teacher B’ elaborated on the effect (which he described as “phenomenal”) that Movement Matters had had on this particular student. He said that many of the boy’s teachers commented to him that the “difference was unbelievable”. Additionally, the programme seemed to have made a difference in the student’s life outside of school as described below.

“And his dad was very impressed with what was going on because the lad was just coming home and going on about this Movement Matters. And it was very unusual for him to be coming home and talking about school at all because all he wants to do is put his skates on and disappear if you know what I mean…but apparently what his dad was saying was that he was very big into it. Calmer even at home. You know, not as hyper. Not as …how would I put it? He is not like disruptive, or aggressive or anything…he is just that bit…that bit hyper, that bit bouncing around the place. And his dad said that he was constantly on about it, loved it, made a difference to his homework and all, that he wants to do his homework I guess because of doing this Movement Matters.”
In relation to the effect of Movement Matters on his students generally, ‘Teacher B’ made the point that it was very obvious that the programme had had a noticeable calming effect as well as developing the students’ self-regulation skills.

“…when they were going out you could see the difference. You could see the calmness. And especially those individuals and when we went to the teachers in the classes before and afterwards and they are saying yes, great, fantastic…they could see the difference.”

Like ‘Teacher A’, ‘Teacher B’ found that his students were very motivated to do the programme. He holds a similar view that because students experience visible success in each session, they enjoy a sense of achievement which then impacts on their behaviour for learning.

“I was giving him different target sheets every day and he was getting excellents, excellents, excellents while he was in the programme…which is unheard of. Crying out for it. I mean that’s all he wants to do…getting out the ladder and the system, doing the bilateral movement, this type of thing and you are explaining how it works and yeah, they got it and they could see the successes. I think that is the biggest point. That they could see their successes…very quickly.”

In summary, the findings from the feasibility study (NBSS, 2015d), suggests that Movement Matters is an effective intervention for young people who experience difficulties staying on-task in the classroom. The “calming” effect of the programme was found to be quantitatively significant and qualitative data provided by both teachers and students concurred that the students were better able to attend to their mainstream lessons having done Movement Matters. The study also has shown that engagement in the programme has contributed to students’ social and emotional literacy skills (NBSS, 2015d, p.45). The positive findings of the feasibility study indicated that the Movement Matters Programme was worth utilising and researching further. It was decided to conduct a ‘national pilot’ in the 2014/2015 academic year. As both the student and teacher voices had been recorded as part of the feasibility study and are reported above, it was decided to gather data on the clinical reasoning of the occupational therapists involved in its inception and implementation. The researcher was also interested in whether the positive effects of the programme as reported by the students and teachers in the feasibility study (NBSS, 2015d) could be captured by standardised quantitative measures of attitude and behaviour (PASS & SDQ).
As can be seen from the documentation on the interventions NBSS occupational therapists use, they are all either existing programmes adapted or new interventions specifically engineered to suit the unique setting of Irish mainstream post primary schools in areas of social disadvantage. The Movement Matters Programme was designed as a progression of the adapted Alert Programme. Thus, information on the adapted Alert Programme is included in the matrix analysis.

5.2.6 Step Two: Critique of Practice Development (Matrix Analysis)

Tables 9 and 10 below are the matrices that critique the Alert and Movement Matters Programmes against the vision for the NBSS occupational therapy service as outlined by MacCobb (2012) after the first feasibility study in the setting. The vertical column on the left are the core occupational therapy constructs on health and wellbeing described by MacCobb, (2012) as person centred, occupation focused, collaborative relationships, context appropriate and environment.
<table>
<thead>
<tr>
<th>Alert Programme (AP)</th>
<th>Timeline</th>
<th>Content (manual &amp; resources)</th>
<th>Application</th>
</tr>
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<tbody>
<tr>
<td>Person centred</td>
<td>2008/2009</td>
<td>• Students develop self awareness by learning how to define and label how their engine is running. This occurs in Stage One of the AP (NBSS AP Manual, p.10-13) (Appendix 2C).&lt;br&gt;• Students are encouraged by the facilitator to trial the sensorimotor strategy at a time when they need it to self regulate and report back if it worked for them. Their choice to use it or not in the future is respected (NBSS AP Manual, p.29,30,35,42) (Appendix 2C).&lt;br&gt;• A Personal Action Plan is developed for each student in the form of the ‘Alert Toolbox’ (NBSS AP Manual, p.52) (Appendix 2C). The content of this plan is chosen by students.</td>
<td>• The ‘My Alert Toolbox’ sticker is applied to the school journal and serves to remind the student of their learning and personal strategies for self regulation. (NBSS AP Manual, p.22) (Appendix 2C)</td>
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<td></td>
<td>2011/2012:</td>
<td>• The first pilot study of the AP aimed to establish its relevance for students and whether they learned self-regulation strategies (MacCobb et al., 2014a, p.410) (Appendix 2D).</td>
<td>• Each student is presented with a specially designed ‘Alert Wristband’ which signifies the completion of programme and reminds the student of the learning and acts as a fidget strategy. (NBSS AP Manual, p.21) (Appendix 2C).</td>
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</tbody>
</table>
### 2012/2013:
- National pilot conducted by the NBSS reports that students learned self-regulation strategies and intend to use them (NBSS, 2015b, p.41) (Appendix 2F).
- The student voice is captured at conclusion of the programme in the form of a questionnaire (NBSS AP Manual, p.15 of appendices) (Appendix 2C).
- Research findings indicate that the programme is a positive learning experience for students (NBSS, 2015b, p.44) (Appendix 2F).

### Timeline

<table>
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<tr>
<th>Occupation focused</th>
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<tr>
<td><strong>2012/2013</strong></td>
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<tr>
<td>Adapted manual produced for the national pilot.</td>
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<tr>
<td><strong>2012 - 2017</strong></td>
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<tr>
<td>Further changes made following each trial up to present day to reflect learning from practice.</td>
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### Content (manual & resources)

- The method of teaching the AP concepts is completed through experiential and experimental activities. Teachers are made aware of this during training days and reminded in the manual (NBSS AP Manual, p.14) (Appendix 2C).

### Application

- Students found the programme enjoyable and relevant and intended to use strategies learned to improve concentration and engagement in learning (MacCobb et al., 2014a, p.422-423) (Appendix 2D).
### Collaborative relationships

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<tr>
<th>Timeline</th>
<th>Content (manual &amp; resources)</th>
<th>Application</th>
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<tr>
<td><strong>2011/2012:</strong></td>
<td>- The first pilot was occupational therapist (OT) led with teacher support at a whole class level. This therapist-teacher collaboration was considered a key part of the pilot (MacCobb et al., 2014b, p.116) (Appendix 2E).&lt;br&gt;- It was recommended that students with more complex learning and/or behaviour needs would be better served in smaller groups (MacCobb et al., 2014b, p.116) (Appendix 2E).</td>
<td>- The AP provided teachers with non-judgemental language to use when addressing behaviour (NBSS, 2015b, p.39) (Appendix 2F).&lt;br&gt;- School managers, teachers and therapists can collaborate towards social inclusion guided by an occupational therapy perspective on self-management (MacCobb et al., 2014b, p.117) (Appendix 2E).&lt;br&gt;- The National Council for Special Education publish a teacher information leaflet reporting that using the AP language in the classroom has been found to be effective when communicating to students about their behaviour presentation and ultimately improving student-teacher relationships (National Council</td>
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<tr>
<td>2012 - 2017</td>
<td>to others with a positive regard, recognising other’s opinions and differences are part of the learning programme. Students share enjoyable activities with each other and with the teacher and thus develop positive relationships and skills through working with others” (NBSS, 2015b, p.43) (Appendix 2F).</td>
<td>for Special Education, 2017) (Appendix 2J).</td>
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<td>- Manual adapted annually following teacher-OT collaborative consultation.</td>
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<tr>
<td>Timeline</td>
<td>Content (manual &amp; resources)</td>
<td>Application</td>
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<td><strong>2013</strong></td>
<td>• Following recommendations in the first pilot the AP was re-designed as a teacher led intervention (MacCobb et al., 2014a, p.424) (Appendix 2D), (MacCobb et al., 2014b, p.118) (Appendix 2E).&lt;br&gt;• The adaptations made to the manual each year serve to make it as relevant to the practice context as possible.</td>
<td>• The ‘original’ Alert Programme (Williams and Shellenberger, 1996) was adapted specifically for this context with studies reporting that teachers found the content, resources and strategies appropriate to classroom setting (MacCobb et al., 2014a, p.424) (Appendix 2D), (MacCobb et al., 2014b, p.117) (Appendix 2E).&lt;br&gt;• Teachers reported that the programme provided additional classroom strategies for management of behaviour in classroom setting (NBSS, 2015b, p.39) (Appendix 2F).</td>
</tr>
<tr>
<td>Timeline</td>
<td>Content (manual &amp; resources)</td>
<td>Application</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| **Environment**  
  - Physical  
  - Cultural  
  - Institutional | | |
| 2011  
  - OT information leaflet published by the Department of Education in Ireland identifies sensory processing and the AP as relevant in supporting students’ participation in school (NBSS, 2011, p.2-3) (Appendix 2A). | • The content of the adapted AP is recommended as appropriate in the proposed new Junior Cycle Curriculum (NBSS, 2015b, p.42) (Appendix 2F).  
• The content supports the development of some of the ‘key skills of staying well’ outlined in the new ‘Wellbeing’ curriculum proposed by the National Council for Curriculum and Assessment (NCCA, 2017, p.23) (Appendix 2M). The AP is now being used in schools as part of the Junior Cycle wellbeing curriculum. | • Awareness of sensory processing theory promotes adaptations to the physical environment to support student tolerance of the school environment (MacCobb et al., 2014b, p.117) (Appendix 2E).  
• “Teachers considered that the experience of facilitating the AP had enabled them to develop a deeper understanding of how the environment may impact on student behaviour and thus provided them with alternative ideas for the establishment of a more productive, functional, appropriate learning space for the students (NBSS, 2015b, p.39) (Appendix 2F). |
| 2012 - 2017  
  - Inter-institutional collaboration evident in the Department of Education and TCD publishing adapted AP manual (Appendix 2C). | | |
| 2014  
  - TCD publish one paper targeting teacher audience to promote classroom management strategies (MacCobb et al., 2014a) (Appendix 2D). | | |
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>- TCD publish another paper targeting OTs and promote collaborative consultation as a method of in-school practice (MacCobb et al., 2014b) (Appendix 2E).</td>
</tr>
<tr>
<td></td>
<td>- Report published by Department of Education recommend the AP as relevant use of teacher’s time (NBSS, 2015b, p.44) (Appendix 2F).</td>
</tr>
</tbody>
</table>
Table 10. Matrix Analysis of the Movement Matters Programme Development.

<table>
<thead>
<tr>
<th>Movement Matters (MM)</th>
<th>Timeline</th>
<th>Content (manual &amp; resources)</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Person centred</strong></td>
<td>2013</td>
<td>- The MM programme was specifically developed for students whose needs were not being adequately met by the strategies offered in the adapted AP (NBSS, 2015d, p.7) (Appendix 2I).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2013/2014</td>
<td>- The warm up and cool down process of every MM session involves tuning into one’s body and taking the pulse (NBSS Movement Matters Session Plans) (Appendix 2H).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The Calmness rating scale promotes student self-reflection. Teachers report that students developed this skill and were able to accurately report their level of calmness (NBSS, 2015d, p.33) (Appendix 2I).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Students report their enjoyment of the programme content (NBSS, 2015d, p.34) (Appendix 2I).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Seventy percent of students reported that the activities in MM made them ‘calmer’ in mainstream lessons (NBSS, 2015d, p.35) (Appendix 2I).</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2013
- The concept of a movement programme for a small cohort of ‘Level 3’ students proposed following practice experience of teachers and NBSS OTs using the AP (NBSS, 2015d, p.7) (Appendix 2I).

2013/2014
- A pilot study was completed in 11 schools which gathered data on students’ perception of calmness and an online survey where students were asked for their views on the programme (NBSS, 2015d, p.33) (Appendix 2I).
<table>
<thead>
<tr>
<th>Occupation focused</th>
<th>Timeline</th>
<th>Content (manual &amp; resources)</th>
<th>Application</th>
</tr>
</thead>
</table>
| 2013/2014         | • The MM Programme was conceived as a tool to regulate high arousal levels of ‘Level 3’ students with ADHD type presentation in order that they be better modulated to engage in the occupations of school.  
• While the activities of the programme were designed with the just right challenge in mind, the emergence of themes of student mastery experience and self-efficacy building in the pilot study was an unforeseen outcome (NBSS, 2015d, p.39) (Appendix 2I). | • Activities within the MM Programme build self-awareness through self-rating on the calmness scale and taking one’s pulse at the end of each session and recording it. (Appendix 2H).  
• The students enjoy using the sensory language of the programme as it gives status and importance to the work they are doing (NBSS, 2015d, p.40) (Appendix 2I).  
• The activities within the programme can act as a catalyst for ‘occupational spinoff’ where unplanned benefits emerge. One such example was the student with OCD who experienced reduction in her anxious symptoms and engagement in exercise outside the school context (NBSS, 2015d, p.53) (Appendix 2I). | • The calmness scale and pulse activities have helped students articulate their feelings to others instead of internalising them according to teacher data (NBSS, 2015d, p.53) (Appendix 2I).  
• The data suggests that students experiencing mastery better equips them to handle their mainstream lessons (NBSS, 2015d, p.39) (Appendix 2I).  
• Teachers in mainstream classrooms report benefits in terms of student’s engagement with learning (NBSS, 2015d, p.40-41) (Appendix 2I).  
• Teacher data reports that the programme improved a student’s engagement in learning at home and general attitude to school (NBSS, 2015d, p.41) (Appendix 2I). |
<table>
<thead>
<tr>
<th>Collaborative relationships</th>
<th>Timeline</th>
<th>Content (manual &amp; resources)</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013-2015</td>
<td>• Once a week OT visit to school following training offered opportunities for collaborative consultation.</td>
<td>• Students participation in programme inspired interest in other teachers regarding learning more about the programme and the use of movement in learning (NBSS, 2015d, p.40) (Appendix 2I).</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>• Cluster meetings of trained teachers offered them the opportunity to share their practice/ experiences of using the programme between schools. These cluster meetings were facilitated by the OTs which allowed them gather detailed practice based information and further develop collaborative relationships (Fitzgerald and MacCobb, 2017) (p.277) (Appendix 2K).</td>
<td>• The teacher training course emphasises the importance of co-regulation and co-occupation (page 6 of Appendix 2G). OTs model the desired facilitation style during training days and during in-school support visits once a week.</td>
</tr>
</tbody>
</table>

• The activities in the MM Programme promote student co-occupation in the form of turn taking, positive re-enforcement and modelling (NBSS, 2015d, p.55) (Appendix 2I).
<table>
<thead>
<tr>
<th>Timeline</th>
<th>Content (manual &amp; resources)</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Context appropriate</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **2013/2014** | • 1st pilot, 11 schools.  
• Mostly conducted in schools in the Dublin region (urban setting) and surrounding counties. | • The activities of the MM Programme are specifically designed for the skill level of ‘Level 3’ students who typically present with deficits in literacy and numeracy and can be at a lower social developmental level. These activities offered a school based task that was skill appropriate as reported by teachers (NBSS, 2015d, p.40) (Appendix 2I). |
• National pilot included schools from urban and rural locations in every region of the country. | • It is designed as a learning programme that is integrated into the ‘Student Behaviour Plan’ with students receiving a certificate upon completion (Appendix 2L).  
• The MM Programme was found to be easily run within context of BfL classroom. It suited the space and timetable of the school and was culturally accepted by students and supported by other teachers (NBSS, 2015d, p.40) (Appendix 2I). |
| **Environment** | • The MM Programme was designed to be used within the BfL classroom using equipment that would be recognizable as part of the P.E. curriculum to ensure that it was culturally sensitive to the setting. | • The programme was described as “dummy proof” and deliverable by non-physical education/movement specialist teachers (NBSS, 2015d, p.54) (Appendix 2I). |
| • Physical  
• Social  
• Cultural | • The equipment of the MM Programme became a normal/routine part of the learning environment with students independently using resources in a responsible and appropriate manner (NBSS, 2015d, p.55) (Appendix 2I). | • The MM Programme was noted to be a catalyst for changing teacher thinking regarding movement as part of learning (NBSS, 2015d, p.54) (Appendix 2I). |
5.2.6.1 **So What?**

The data reported in the matrix analysis above is important in the context of this study for a number of reasons.

1. The critique indicated that the development and implementation of the Alert and Movement Matters programmes show evidence that all five principles of occupational therapy practice described by MacCobb (2012) were actioned. This result of the analysis of the practice is important as it adds credibility that the practice being described and studied has a strong foundation rooted in the literature published by the researcher’s clinical team and the Department of Education with whom they work. Central to this evidence of action are the voices of the students and teachers reported in the adapted Alert Programme studies (MacCobb et al., 2014b; MacCobb et al., 2014a; NBSS, 2015b) and the first feasibility study of Movement Matters (NBSS, 2015d).

2. Reporting the student and teacher voice data from the Movement Matters feasibility study is important as it reassures the reader that the programme under study is sensitive to the needs, desires, interests and cognitive development of students as recommended by Dewey (1910). It also demonstrates that the programme is valued by those who it is designed to support and those whose job it is to provide the support. It consequently allows the primary focus of this study to be on the clinical reasoning of the occupational therapists as well as pre and post quantitative student data. Both of these data sets are unique and a contribution to knowledge base within the field of in-school occupational therapy practice.

3. Showing evidence of person centred and occupation focused practice through collaborative relationships in school contexts using data provided by teachers and students demonstrates the person-environment-occupation fit (Law et al., 1996) of these occupational therapy programmes into educational environments. The analysis demonstrates that these student centred education programmes (Alert and Movement Matters) offer unique perspectives of occupational therapy related to self-regulation to a specific group of students received ‘Level 3’ support to promote their behaviour for learning skills.
4. The analysis of this data is also important in the context of developing practice in an emerging context which is at the core of this study. The value of having an academic occupational therapist in a supervisory position who could envision a theory driven service should not be understated. This facilitated the novice occupational therapists working in this emerging area to base their practice on an application of theory rather than a reliance on traditional evidence based practice, of which there was little. In retrospect, publishing peer reviewed papers and reports on the practice being developed contributed to a bank of theory informed practice that could be analysed in this study and reported on. This documentation on practice provides a record of the work and allowed it to be shared with the wider community of teachers and occupational therapists. It also provided evidence of practice to the Department of Education that would ultimately inform the decision to include occupational therapy in the recently announced Demonstration In-School Therapy Project (DES, 2018). The Demonstration Project will explore how occupational therapy and speech and language therapy can support the learning needs of all students under a three tiered continuum support model in 75 early years settings and 75 schools. The project is part of the government's overall plan to review the role of special needs assistants (SNAs) in schools and explore how other disciplines including occupational therapy can support students' learning needs within the school context. The NBSS occupational therapy team’s publications are referenced within this policy advice paper as examples of successful in-school occupational therapy practice in Ireland (NCSE, 2018, p.68), thus setting a precedent for including occupational therapy in the Demonstration In-School Therapy Project. This is further evidence of theory informing practice and consequently influencing and effecting educational policy for students with additional educational needs. This data also confirms that the NBSS partnership with the Discipline of Occupational Therapy in Trinity College Dublin provided a positive culture for practice development. This is sustained by embedding both processes and outcomes in the strategic plan for the service or work place. There would have been no publications without the active support of both organisations.

5. There are interesting comparisons to be made between the data presented in the matrices and the Deweyan philosophy on learning reported in the literature. For instance, Dewey called for subject matter to connect to student’s needs, desires
and interests while being at the appropriate cognitive level to achieve the just right challenge. The data reported by students in both Alert and Movement Matters studies confirm that the content was enjoyable, challenging and relevant to the experience of being a student in a mainstream post primary school. Dewey also recommended that learning experiences should have a clear purpose, an understanding of the surrounding conditions, knowledge of what occurred before, so that it could allow reflection and analysis of issues and experiences. As Movement Matters builds on the Alert Programme, both students and teachers have a vocabulary and skill set developed in relation to self-regulation prior to moving onto a more intensive, individualised intervention. Developing social competence is one of the main goals of the educational experience according to Dewey (1910). Both programmes strongly promote student reflection of their in-school experiences with the goal of learning from these experiences in order to grow and become more competent social beings. The nature of the relationships between teachers and students during the Alert and Movement Matters sessions is also reflective of Dewey’s vision of a child centred learning experience in which both parties learn in partnership while trying out effective techniques of teaching and learning.

The data presented in the matrices is also a potential contribution to the gap in the literature related to shortcomings within Dewey’s educational philosophy identified by Sikandar (2015). The criticism focuses on the absence of learning objectives and a lack of clarity as to how to set up systems that can see through the inception of ideas to the conclusion of the experiences and to gauge the growth and development of students. The programmes critiqued in the matrices show evidence of a structured learning experience with clear objectives, reflective activities and a focus on measurable outcomes for the student.

Further discussion and synthesis of these results with the literature will be reported in the discussion chapter.
5.3 Summary of Objective One

This concludes Part One of the Results Chapter which described and critiqued the occupational therapy practice that led to the development of the Movement Matters Programme. The description of practice was informed by 12 document sources while the critique of this practice was completed using the matrix analysis method. The matrices in Tables 8 and 9 indicate that the development and implementation of the Alert and Movement Matters programmes show evidence of all five principles of occupational therapy described by MacCobb (2012) in her vision for practice in that setting. A number of other important outcomes related to occupational therapy practice development and learning experiences of students were also outlined.

Part Two that follows reports the quantitative data pertaining to Objective Two.
5.4 Objective Two: Quantitative Data Analysis

5.4.1 Introduction

Objective Two contributes to the overall aim of the study as it outlines a profile of the students from the practice context and attempts to measure any effect the Movement Matters Programme had on the student participants’ scores in standardised measures. The data is presented in two steps. Comments are made regarding analysis of the results based on practice experience in the setting and also informed by the literature review.

Step One: Student Participant Profile

The high return rate (95%) of student pre measures in the Pupil Attitude to Self and School (PASS) and Strengths and Difficulties Questionnaire (SDQ) provided the researcher the opportunity to report this data in order to build a profile of this group of 39 Level 3 students in the NBSS ‘Behaviour for Learning’ programme. Building a profile of the participating students is important in the context of this study in an emerging area. Gaining an insight into the client experience is a vital part of understanding the practice context.

Step Two: Pre and Post Group Testing

This section reports the results of the pre and post group (N=39) testing. The pre and post data was analysed to determine whether there was a statistically significant difference in student participant’s scores on the PASS and SDQ measures after completing the Movement Matters programme.

5.4.2 Data Returned

The tables below outline the measures returned for each student participant before and after completing the Movement Matters Programme (N=39). Data was returned for all 39 student participants but not all participants have ‘complete data sets’. There are eight individual measures that comprise a complete data set.

1. Pre PASS
2. Post PASS
3. SDQ Student pre
4. SDQ Student post
5. SDQ Parent pre
6. SDQ Parent post
7. SDQ Teacher pre
8. SDQ Teacher post

9 of the 39 students (23%) have complete data sets comprising of the pre and post PASS measure and the triangulated pre and post SDQ measure from the student, parent and teacher and perspective. 11 students (28%) have complete SDQ data sets, 13 (33%) students have partial SDQ data sets (2 out of the 3 sources) and 15 (38%) students have one source for SDQ comparison.

5.4.2.1 Measure Completion Rates

**Table 11. PASS Completion Rate**

<table>
<thead>
<tr>
<th>N</th>
<th>39</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>37</td>
</tr>
<tr>
<td>Response rate</td>
<td>95%</td>
</tr>
</tbody>
</table>

**Table 12. SDQ Parent Completion Rate**

<table>
<thead>
<tr>
<th>N</th>
<th>78 (39 pre + 39 post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>44 (30 pre + 14 post)</td>
</tr>
<tr>
<td>Return rate</td>
<td>56%</td>
</tr>
</tbody>
</table>

**Table 13. SDQ Teacher Completion Rate**

<table>
<thead>
<tr>
<th>N</th>
<th>78 (39 pre + 39 post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>55 (31 pre + 24 post)</td>
</tr>
<tr>
<td>Return rate</td>
<td>71%</td>
</tr>
</tbody>
</table>
Table 14. SDQ Student Completion Rate

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>78 (39 pre + 39 post)</td>
</tr>
<tr>
<td>Completed</td>
<td>76 (38 pre + 37 post)</td>
</tr>
<tr>
<td>Return rate</td>
<td>96%</td>
</tr>
</tbody>
</table>

5.4.2.2 Student Participant Characteristics

Table 15. Student Participant Characteristics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>39</td>
</tr>
<tr>
<td>Male</td>
<td>34 (87.2%)</td>
</tr>
<tr>
<td>Female</td>
<td>5 (12.8%)</td>
</tr>
<tr>
<td>Mean age</td>
<td>13.4</td>
</tr>
<tr>
<td>Year group</td>
<td></td>
</tr>
<tr>
<td>1st year</td>
<td>10 (25.6%)</td>
</tr>
<tr>
<td>2nd year</td>
<td>25 (64.1%)</td>
</tr>
<tr>
<td>3rd year</td>
<td>4 (10.3%)</td>
</tr>
<tr>
<td>School location</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>26 (66.7%)</td>
</tr>
<tr>
<td>Rural</td>
<td>13 (33.3%)</td>
</tr>
</tbody>
</table>
5.5 Step One: Building a Student Participant Profile

The purpose of reporting the pre-intervention data from the student perspective from the PASS and SDQ measures is to build a profile of 39 Level 3 students engaged in the Behaviour for Learning Programme in NBSS partner schools. Extensive comparative information is available on student scores in the U.K. and will be referred to in this section. The researcher recognises that standardised measures can contribute to building an insight into the perceptions of students who experience social, emotional and behavioural difficulties. The term ‘factor’ is used when referring to the components of the PASS measure and the term ‘scale’ is used when referring to the components of the SDQ measure.

5.5.1 PASS Data (pre intervention)

Descriptive statistics of the nine factors that make up the Pupil Attitude to Self and School (PASS) measure are outlined in Table 16 below. This data relates to only 37 of the 39 students that completed the PASS measure before starting the Movement Matters programme. Data from two students was lost due to a software issue during the data collection process.

*Table 16. Descriptive statistics of the nine factors that make up the PASS measure.*

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feelings about school</td>
<td>37</td>
<td>5.10</td>
<td>100.00</td>
<td>32.176</td>
<td>.308</td>
<td>-1.453</td>
<td>.759</td>
</tr>
<tr>
<td>Perceived Learning</td>
<td>37</td>
<td>.60</td>
<td>43.664</td>
<td>32.673</td>
<td>.269</td>
<td>-1.269</td>
<td>.759</td>
</tr>
<tr>
<td>Capability of teacher</td>
<td>37</td>
<td>1.50</td>
<td>64.40</td>
<td>27.249</td>
<td>.336</td>
<td>-1.451</td>
<td>.759</td>
</tr>
<tr>
<td>Self-regard as a learner</td>
<td>37</td>
<td>2.00</td>
<td>100.00</td>
<td>30.085</td>
<td>.322</td>
<td>-1.269</td>
<td>.759</td>
</tr>
<tr>
<td>Preparedness for learning</td>
<td>37</td>
<td>1.00</td>
<td>65.00</td>
<td>33.428</td>
<td>.315</td>
<td>-1.654</td>
<td>.759</td>
</tr>
<tr>
<td>Attitude to teachers</td>
<td>37</td>
<td>1.00</td>
<td>67.418</td>
<td>39.634</td>
<td>.388</td>
<td>-1.717</td>
<td>.759</td>
</tr>
<tr>
<td>General work effort</td>
<td>37</td>
<td>2.70</td>
<td>57.965</td>
<td>29.515</td>
<td>.392</td>
<td>-1.229</td>
<td>.759</td>
</tr>
<tr>
<td>Confidence in learning</td>
<td>37</td>
<td>1.00</td>
<td>47.319</td>
<td>33.410</td>
<td>.316</td>
<td>-1.654</td>
<td>.759</td>
</tr>
<tr>
<td>Attitudes to attendance</td>
<td>37</td>
<td>1.00</td>
<td>51.569</td>
<td>34.227</td>
<td>.388</td>
<td>-1.643</td>
<td>.759</td>
</tr>
<tr>
<td>Response to curriculum</td>
<td>37</td>
<td>2.10</td>
<td>35.5419</td>
<td>24.578</td>
<td>.388</td>
<td>1.009</td>
<td>.759</td>
</tr>
</tbody>
</table>

The first four columns are most relevant to step one. 'N' refers to the number of students who completed each factor. The 'minimum' and 'maximum' statistic refers to the lowest
and highest score recorded for that factor from the 37 students. The factor scores are calculated on a percentile scale between 0-100. The mean statistic is the average score the 37 students reported for that factor. This score can be read as a percentage. Each of these factors are outlined in more detail in the pages that follow with the researcher’s interpretations of the data provided also.

The data outlined in Figure 19 was extrapolated from GL Assessment’s Pupil Attitudes to Self and School (PASS) attitudinal survey (GL Assessment, 2016). This study is based on data from 31,873 children from Year 3 to Year 9 across England and Wales, compiled during the period May 2015 – March 2016. There were on average around 2,500 students in each of the primary years 3 to 6 (8-11 years old) and around 7,000 students in each of the secondary years 7 to 9 (12-14 years old).

The data outlined in Figure 19 was extrapolated from GL Assessment’s Pupil Attitudes to Self and School (PASS) attitudinal survey (GL Assessment, 2016). This study is based on data from 31,873 children from Year 3 to Year 9 across England and Wales, compiled during the period May 2015 – March 2016. There were on average around 2,500 students in each of the primary years 3 to 6 (8-11 years old) and around 7,000 students in each of the secondary years 7 to 9 (12-14 years old).

As this UK study contains children of primary school age as well as post primary school, direct comparisons and conclusive findings cannot be made to the sample in this study. However, comparing the mean scores of the Level 3’ students in NBSS partner schools to the students in the UK study provides an insight into how an understudied population experience their lives in comparison to a large sample in a similar country.
The following reporting of factors 1-9 relate to the 37 Level 3’ students who completed the PASS measure before participating in the Movement Mattes programme.

5.5.1.1 Factor 1 (Feelings about School)

This factor explores whether a student feels secure, confident and included in their learning community.

<table>
<thead>
<tr>
<th>Low satisfaction</th>
<th>Low moderate satisfaction</th>
<th>Moderate satisfaction</th>
<th>High satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥5th percentile</td>
<td>6th-20th percentile</td>
<td>21st-30th percentile</td>
<td>31st-100th percentile</td>
</tr>
<tr>
<td>N=1</td>
<td>N=7</td>
<td>N=2</td>
<td>N=27</td>
</tr>
<tr>
<td>2.7%</td>
<td>18.9%</td>
<td>5.4%</td>
<td>72.9%</td>
</tr>
</tbody>
</table>

**Figure 21. Results of Factor 1 (Feelings about School)**

**Interpretations**

Most respondents (72.9%: 27) reported a high satisfaction with their feelings of security, confidence and inclusion in their learning community. In comparison, 21.6% (n=10) reported low or low moderate satisfaction with these feelings.
The mean percentage across this study’s sample for Factor 1 was 53.02% which compares to 88% (males) and 89% (females) in the UK study. While the results for factor one initially appear not to be overly concerning, a different perspective emerges when compared to the large UK sample where the mean score was considerably higher.

It is interesting to note that despite all of these NBSS study participants being labelled Level 3, meaning that their behaviour in the school environment has been warranted for a period of ‘intensive, individualised intervention’. The data suggests that most of these students feel secure, confident and included in their school community.

This result is comparable with the literature from similar settings (Jahnikainen, 2001, Macleod, 2005). Students who attended a special class within mainstream schools were found to dislike school more than their peers, but the target of their dislike was their mainstream experience. Their special class experience was identified as the most positive and they felt they belonged and fitted in.
5.5.1.2  Factor 2 (Perceived Learning Capability)

This factor offers an insight into a pupil’s level of self-respect, determination and openness to learning.

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>5th-20th Percentile</th>
<th>21st-30th Percentile</th>
<th>31st-100th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low satisfaction</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Low moderate satisfaction</td>
<td>9</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Moderate satisfaction</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>High satisfaction</td>
<td></td>
<td>n=22</td>
<td></td>
</tr>
<tr>
<td>n=4</td>
<td>10.8%</td>
<td>24.3%</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

**Figure 22. Results of Factor 2 (Perceived Learning Capability)**

**Interpretations**

A majority of respondents (59%: 22) report high levels of satisfaction with their levels of self-respect, determination and openness to learning. These are key components of the factors that make up student wellbeing as outlined in the literature review. In contrast, 35.1% (n=13) have low/low moderate satisfaction with these levels.

The mean score in this study’s sample (43.99%) is considerably lower than the mean score in the UK study (male 86%/ female 87%).
These figures relate to some of the factors discussed in the semi structured group interviews outlined in Part Two. The occupational therapists discuss students who present as lacking confidence in themselves as learners and how the Movement Matters Programme provides these students with an opportunity to be successful in, and enjoy a school based occupation.
5.5.1.3 **Factor 3 (Self Regard as a Learner)**

Equivalent to self-worth, this factor is focused specifically on self-awareness as a learner, highlighting levels of motivation and determination.

<table>
<thead>
<tr>
<th>Low satisfaction</th>
<th>Low moderate satisfaction</th>
<th>Moderate satisfaction</th>
<th>High satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥5th percentile</td>
<td>6th-20th percentile</td>
<td>21st-30th percentile</td>
<td>31st-100th percentile</td>
</tr>
<tr>
<td>n=3</td>
<td>n=11</td>
<td>n=5</td>
<td>n=18</td>
</tr>
<tr>
<td>8.1%</td>
<td>29.7%</td>
<td>13.5%</td>
<td>48.6%</td>
</tr>
</tbody>
</table>

**Figure 23. Results of Factor 3 (Self Regard as a Learner)**

**Interpretations**

The results report that 37.8% (n=14) of students have low/low moderate satisfaction with their levels of motivation for learning and determination as a learner. In contrast, 48.6% of respondents report high levels of satisfaction.

The mean score in this study’s sample (34.6%) is considerably lower than the mean score in the UK study (male 77%/ female 78%). Factors 2 and 3 report similar findings with both factors aiming to measure student determination as learners.
5.5.1.4 Factor 4 (Preparedness for Learning)

This factor covers areas such as study skills, attentiveness and concentration, looking at the pupil’s determination and openness to learning.

<table>
<thead>
<tr>
<th>Low satisfaction</th>
<th>Low moderate satisfaction</th>
<th>Moderate satisfaction</th>
<th>High satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥5th percentile</td>
<td>6th-20th percentile</td>
<td>21st-30th percentile</td>
<td>31st-100th percentile</td>
</tr>
<tr>
<td>n=5</td>
<td>n=9</td>
<td>n=7</td>
<td>n=16</td>
</tr>
<tr>
<td>13.5%</td>
<td>24.3%</td>
<td>18.9%</td>
<td>43.2%</td>
</tr>
</tbody>
</table>

**Figure 24. Results of Factor 4 (Preparedness for Learning)**

**Interpretations**

The results indicate that 37.8% (n=14) of students have low/low moderate satisfaction with their academic skills such as attention and concentration and consequently their self-determination and openness to learning. In contrast, 43.2% (n=16) report high satisfaction with their ‘preparedness for learning.’

The mean score in this study’s sample (35.28%) is nearly three times lower than the mean score in the UK study (male 90% / female 91%). This finding suggests that most of the
study sample have insight into their attention and concentration difficulties. Interestingly, the percentage of students in the low/low moderate category is exactly the same as in factor 3 and 4 (37.8%) and very similar in factor 2 (35.1%), all of which measure aspects of self-determination.
5.5.1.5 Factor 5 (Attitude to Teachers)

This factor relates to a young person’s perceptions of the relationships they have with the adults in school. A low score can flag a lack of respect.

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>6th-20th Percentile</th>
<th>21st-30th Percentile</th>
<th>31st-100th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low satisfaction</td>
<td>n=1 2.7%</td>
<td>n=2 5.4%</td>
<td>n=30 81.1%</td>
</tr>
<tr>
<td>Low moderate</td>
<td>n=4 10.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 25. Results of Factor 5 (Attitude to Teachers)**

**Interpretations**

The majority of students (81.1%) report high satisfaction with the relationships they have with adults in school. Only 2.7% report low satisfaction in this regard. The mean score in this study’s sample (67.42%) is lower than the mean score in the UK study (88% male & female).

This is an interesting finding. It challenges the perspective that students with challenging behaviour dislike their teachers and ‘act out’ as a personal attack at individual teachers.
Data suggests that vast majority of this sample of students with challenging behaviour respect their teachers and their behaviour may not be a result of premeditated actions but possibly related to their experience of frustration in academic and situational challenges.

From my practice experience in this setting, I have worked with students who display extremely aggressive and abusive behaviour in episodes of anger and ‘meltdown’ but later act as if nothing happened and exhibit very sociable behaviours at subsequent interactions days later.
5.5.1.6 Factor 6 (General Work Ethic)

Highlights the students’ aspirations and motivation to succeed in life, this measure focuses on purpose and direction, not just at school, but beyond.

<table>
<thead>
<tr>
<th></th>
<th>Low satisfaction (≥5th percentile)</th>
<th>Low moderate satisfaction (6th-20th percentile)</th>
<th>Moderate satisfaction (21st-30th percentile)</th>
<th>High satisfaction (31st-100th percentile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=1</td>
<td>2.7%</td>
<td>13.5%</td>
<td>2.7%</td>
<td>81.1%</td>
</tr>
</tbody>
</table>

Figure 26. Results of Factor 6 (General Work Ethic)

**Interpretations**

Most students (81.1%: 30) report high satisfaction with their aspirations and motivation to succeed in life, while 16.2% (n=6) report low/low moderate satisfaction. The mean score in this study’s sample (57.98%) is considerably lower than the mean score in the UK study (86% male/ 85% female). My practice experience would reflect this finding as many Level 3 students I have worked with seldom display a vision for their future and what they plan
to do as a career or in further education. If they do have a goal, they often do not know how to achieve it. They tend to live in the ‘here and now’.
5.5.1.7 Factor 7 (Confidence in Learning)

Identifies a student’s ability to think independently and to persevere when faced with a challenge.

<table>
<thead>
<tr>
<th>Low satisfaction</th>
<th>Low moderate satisfaction</th>
<th>Moderate satisfaction</th>
<th>High satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥5th percentile</td>
<td>6th-20th percentile</td>
<td>21st-30th percentile</td>
<td>31st-100th percentile</td>
</tr>
<tr>
<td>n=4</td>
<td>n=9</td>
<td>n=1</td>
<td>n=23</td>
</tr>
<tr>
<td>10.8%</td>
<td>24.3%</td>
<td>2.7%</td>
<td>62.1%</td>
</tr>
</tbody>
</table>

Figure 27. Results of Factor 7 (Confidence in Learning)

**Interpretations**

The results show that 35.1% (n=13) of students have low/low moderate satisfaction in their confidence in learning which includes perseverance when faced with a challenge. The mean score in this study’s sample (47.32%) is much lower than the mean score in the UK study (81% male/ 82% female).

This result relates closely to previous factors that measured student determination (factor 2: 35.1%, factor 3: 37.8% and factor 4: 37.8%) and produced a similar result (internal
consistency in the factor analysis). I have frequently worked in practice with Level 3 students who present with poor independent thinking skills and perseverance when faced with a challenge in a social and/or academic task. Alternatively, some students have presented as extremely confident in their abilities and do not recognise their level of difficulty which can lead to challenges in relationships with peers and teachers.
5.5.1.8  Factor 8 (Attitudes to Attendance)

Correlating very highly with actual attendance 12 months later, this measure enables teachers to intercede earlier with strategies to reduce the likelihood of truancy (GL Assessment, 2016).

<table>
<thead>
<tr>
<th>Satisfaction Level</th>
<th>5th-20th Percentile</th>
<th>21st-30th Percentile</th>
<th>31st-100th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low satisfaction</td>
<td>n=2 5.4%</td>
<td>n=9 24.3%</td>
<td>n=21 56.8%</td>
</tr>
<tr>
<td>Low moderate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 28. Results of Factor 8 (Attitudes to Attendance)**

**Interpretations**

The results show that 29.7% (n=11) of respondents report low/low moderate satisfaction with their attitude to attending school and are likely to be poor attenders within 12 months. In contrast, 56.8% (n=21) are highly satisfied with their attendance. The mean score in this study’s sample (51.55%) is much lower than the mean score in the UK study (85% male/86% female). My experience in this practice context is consistent with the findings of factor
8. There is typically a small number of students that regularly do not attend school and find themselves isolated from their peers and with serious academic and social implications. In contrast, 70.3% (n=26) of respondents report moderate or high satisfaction with their attendance. My practice experience confirms this figure as consistent with what occurs in schools. Level 3 students are typically steady school attenders. One potential explanation for this trend is that these students frequently come from difficult home environments with an array of social issues and may be content to leave the home environment for the day as school provides them with the stability and consistency that is absent at home.

The data below provided by the NBSS of all 758 Level 3' students’ attendance during the academic year of this study (2014/2015) reports that 70.8% (n=531) of students missed between one and thirty days at school. This is the same academic year in which the data for this study was collected and interestingly, this figure (70.8%: 531) is very similar to the percentage of students (70.3%: 26) who reported moderate or high satisfaction with their attendance during the same period.

![Figure 29. Level 3 students days absent September 1st to April 24th (2014/2015).](image)

Under Irish law (Oireachtas, 2000), any student who misses 20 days or more of school in one academic year must be reported to educational welfare services. School Boards of Management are obliged to report their attendance strategies to these services including programmes aimed at promoting good behaviour and encouraging attendance.

The qualitative data of the semi structured group interviews reports that the occupational therapists’ have observed the Movement Matters Programme being used as a method to
encourage students with attendance issues to engage with a school occupation and consequently improve attendance.
5.5.1.9  **Factor 9 (Response to Curriculum Demands)**

This factor focuses on motivation to undertake and complete curriculum based tasks, highlighting the student’s approach to communication and collaboration.

<table>
<thead>
<tr>
<th>Low satisfaction ≥5th percentile</th>
<th>Low moderate satisfaction 6th-20th percentile</th>
<th>Moderate satisfaction 21st-30th percentile</th>
<th>High satisfaction 31st-100th percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=3</td>
<td>n=11</td>
<td>n=8</td>
<td>n=15</td>
</tr>
<tr>
<td>8.1%</td>
<td>29.7%</td>
<td>21.6%</td>
<td>40.5%</td>
</tr>
</tbody>
</table>

**Figure 30. Results of Factor 9 (Response to Curriculum Demands)**

**Interpretations**

The results show that 37.8% (n=14) of students report low/low moderate satisfaction with their motivation to complete curriculum based tasks and in relation to communication and collaboration. Only 40.5% (n=15) report high satisfaction. The mean score in this study’s sample (35.49%) is considerably lower than the mean score in the UK study (80% male and female).
The exact same percentage (37.8%: 14) of students report low/low moderate satisfaction in factors 3 and 4 which explore a student’s determination as a learner which is relatable to motivation to engage with the curriculum as captured in this factor. These results may be indicative of a poor fit between person, environment and occupation. Students with below age appropriate academic skills (person) engaging with a curriculum beyond their ability (occupation) in a school context that may not understand their challenges (environment) which can lead to an escalation of behaviour as a result of a cycle of failure.
5.5.2 SDQ Student Data (pre intervention)

Descriptive statistics of the five scales that make up the 'Total Difficulties' score (called overall stress in the table below) in the Strengths and Difficulties Questionnaire (SDQ) from the student perspective are outlined in Table 17 below. The SDQ is a brief behavioural screening questionnaire about 3-16 year olds. The SDQ was chosen as an outcome measurement for the study as it has been used by the NBSS in prior studies (NBSS et al., 2013) to measure changes in behaviour and is recognised as an appropriate tool for evaluating interventions. "Before" and "after" SDQs can be used to audit everyday practice (e.g. in clinics or special schools) and to evaluate specific interventions (e.g. parenting groups).

Table 17. SDQ Student Data (pre intervention)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Pre-self overall stress</td>
<td>38</td>
<td>3.00</td>
<td>23.00</td>
<td>16.1579</td>
<td>4.42674</td>
<td>-.920</td>
<td>.363</td>
</tr>
<tr>
<td>Pre-self emotional stress</td>
<td>39</td>
<td>0.00</td>
<td>8.00</td>
<td>2.7692</td>
<td>2.08329</td>
<td>.361</td>
<td>.378</td>
</tr>
<tr>
<td>Pre-self behavioural difficulties</td>
<td>39</td>
<td>0.00</td>
<td>9.00</td>
<td>3.9231</td>
<td>1.70733</td>
<td>.427</td>
<td>.378</td>
</tr>
<tr>
<td>Pre-self hyperactivity and concentration difficulties</td>
<td>39</td>
<td>1.00</td>
<td>10.00</td>
<td>6.9223</td>
<td>2.38369</td>
<td>-.632</td>
<td>.378</td>
</tr>
<tr>
<td>Pre-self difficulties getting along with other children</td>
<td>38</td>
<td>0.00</td>
<td>8.00</td>
<td>1.6316</td>
<td>1.49632</td>
<td>2.363</td>
<td>.363</td>
</tr>
<tr>
<td>Pre-self kind and helpful behaviour</td>
<td>38</td>
<td>4.00</td>
<td>10.00</td>
<td>7.3158</td>
<td>1.61254</td>
<td>-.220</td>
<td>.383</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

More detail on each of the elements listed in Table 17 will follow with the researcher's interpretations of this data in the next section. The 'minimum' and 'maximum' statistics refer to the lowest and highest score provided by students within that scale. The 'mean statistic' is the average score provided by the students for each scale.

See Table 18 below for the range of scores for each scale. 'P' stands for parent, 'T' stands for teacher and 'S' stands for self.
Table 18. Range of scores for each SDQ 'scale'

<table>
<thead>
<tr>
<th>Scale</th>
<th>Normal</th>
<th>Borderline</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total difficulties</td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional sympt.</td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct problems</td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperactivity</td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer problems</td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prosocial behav.</td>
<td>F</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The table below (re-produced for ease of reading) outlines the mean scores of each individual student SDQ scales from a representative British sample including 4,228 11-15 year olds.

Table 19. Mean scores for SDQ scales (self-report) from UK study (Meltzer et al, 2000)

<table>
<thead>
<tr>
<th>Scale (self-report)</th>
<th>Mean score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total difficulties/ overall stress</td>
<td>10.3</td>
</tr>
<tr>
<td>1. Emotional stress</td>
<td>2.8</td>
</tr>
<tr>
<td>2. Conduct problems/ behaviour problems</td>
<td>2.2</td>
</tr>
<tr>
<td>3. Hyperactivity/ concentration difficulties</td>
<td>3.8</td>
</tr>
<tr>
<td>4. Peer problems/ difficulty getting along with others</td>
<td>1.5</td>
</tr>
<tr>
<td>5. Prosocial behaviour/ kind and helpful behaviour</td>
<td>8.0</td>
</tr>
</tbody>
</table>
The researcher recognises that direct comparisons and conclusive findings cannot be made to the sample in this study. However, comparing the mean scores of the Level 3 students in NBSS partner schools to the students in the UK study provides an insight into how an understudied population experience their lives in comparison to a large sample in a similar country. The sample is described in more detail in Meltzer et al. (2000).
5.5.2.1 Total Difficulties

These scores relate to overall stress of student participants for this study. The ‘total difficulties’ score is determined by the results of the five scales of the SDQ.

<table>
<thead>
<tr>
<th></th>
<th>Normal 0-15</th>
<th>Borderline 16-19</th>
<th>Abnormal 20-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>20</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>%</td>
<td>52.6%</td>
<td>29%</td>
<td>18.4%</td>
</tr>
</tbody>
</table>

Figure 31. Results of Total Difficulties

**Interpretations**

The results indicate that nearly half of students (47.4%: 18) are in the borderline or abnormal range in relation to ‘overall stress’. The mean score of this study’s sample (15.15) is 5 points higher than the mean from the UK study (10.3) (Meltzer et al., 2000) and is close to the borderline range.
5.5.2.2  Emotional Symptoms

These scores relate to emotional stress of student participants.

<table>
<thead>
<tr>
<th>Normal</th>
<th>Borderline</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>6</td>
<td>7-10</td>
</tr>
<tr>
<td>N=36</td>
<td>N=1</td>
<td>N=2</td>
</tr>
<tr>
<td>92.3%</td>
<td>2.6%</td>
<td>5.1%</td>
</tr>
</tbody>
</table>

The data indicates that 92.3% (n=36) of students fall within the normal range for emotional stress. The mean score for ‘emotional stress’ in this study’s sample is consistent with the mean from the UK study (2.8) (Meltzer et al., 2000) which is within the normal range.

It is interesting to note that there is a considerable difference between the scores for overall stress (47.4% borderline/abnormal) and emotional stress (7.7% borderline/abnormal). This finding suggests that emotional stress is not a major contributory factor to students’ experience of overall stress but rather other factors that will become apparent as the other scales within the SDQ are reported below.

Figure 32. Results of Emotional Symptoms

Interpretations

The data indicates that 92.3% (n=36) of students fall within the normal range for emotional stress. The mean score for ‘emotional stress’ in this study’s sample is consistent with the mean from the UK study (2.8) (Meltzer et al., 2000) which is within the normal range.

It is interesting to note that there is a considerable difference between the scores for overall stress (47.4% borderline/abnormal) and emotional stress (7.7% borderline/abnormal). This finding suggests that emotional stress is not a major contributory factor to students’ experience of overall stress but rather other factors that will become apparent as the other scales within the SDQ are reported below.
5.5.2.3 **Conduct Problems**

These scores relate to behavioural difficulties of student participants.

<table>
<thead>
<tr>
<th>Normal</th>
<th>Borderline</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>4</td>
<td>5-10</td>
</tr>
<tr>
<td>N=16</td>
<td>N=10</td>
<td>N=13</td>
</tr>
<tr>
<td>41.1%</td>
<td>25.6%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

**Figure 33. Results of Conduct Problems**

**Interpretations**

The data shows that 58.9% (n= 23) of students fall within the borderline/abnormal range for conduct problems.

The mean score for ‘conduct problems’ in this study (3.92) is considerably higher than the mean in the UK study (2.2) (Meltzer et al., 2000) and close to the borderline range (4) for the whole group. This finding may indicate that most students in the sample have insight into their behavioural difficulties but this data also poses the question regarding the remaining 41.1% (n= 16) that were in the normal range despite being categorised as Level 3 students requiring intensive, individualised support.
5.5.2.4 Hyperactivity

These scores relate to hyperactivity and concentration difficulties of student participants.

<table>
<thead>
<tr>
<th>Normal</th>
<th>Borderline</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>6</td>
<td>7-10</td>
</tr>
</tbody>
</table>

N=11 28.2%  N=6 15.4%  N=22 56.4%

![Hyperactivity Pie Chart]

**Figure 34. Results of Hyperactivity**

**Interpretations**

The data reports that 71.8% (n=28) of students fell within the borderline/abnormal range for hyperactivity and concentration difficulties.

The mean score for ‘hyperactivity’ in this study is 6.69. This contrasts with a mean score of 3.8 for the UK study sample (Meltzer et al., 2000) and is close to the abnormal range (7-10) for the whole group.

Like the results for ‘conduct problems’, this may indicate high levels of insight from the student perspective into their difficulties with hyperactivity and concentration. It also suggests that the teachers selected the appropriate candidates to take part in the programme.
5.5.2.5 Peer Problems

These scores relate to student participant’s difficulties getting along with other children.

<table>
<thead>
<tr>
<th></th>
<th>Normal</th>
<th>Borderline</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>N=36</td>
<td>N=1</td>
<td>N=1</td>
</tr>
<tr>
<td>94.8%</td>
<td>2.6%</td>
<td>2.6%</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 35. Results of Peer Problems**

**Interpretations**

The results show that 94.8% (n= 36) of students fall into the normal range in relation to difficulties getting along with other children. The mean score for ‘peer problems’ in this study (1.63) is very similar to the mean in the UK study (1.5) (Meltzer et al., 2000) and is within the normal range (0-3) for the whole group.

This data suggests that this group of Level 3 students are generally happy with the relationships they have with their peers. From my practice experience, Level 3 students typically present as boisterous, energetic and exhibiting acting out behaviours. They can be popular amongst their peers due to their extrovert personalities and may be less likely to experience bullying.
5.5.2.6  **Prosocial Behaviour**

These scores relate to kind and helpful behaviour of student participants.

<table>
<thead>
<tr>
<th>Normal</th>
<th>Borderline</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10</td>
<td>5</td>
<td>0-4</td>
</tr>
<tr>
<td>N=31</td>
<td>N=6</td>
<td>N=1</td>
</tr>
<tr>
<td>81.6%</td>
<td>15.8%</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

![Prosocial Behaviour Chart](chart.png)

**Figure 36. Results of Prosocial Behaviour**

**Interpretations**

The data indicates that 81.6% (n=31) of students fall within the normal range for kind and helpful behaviours.

The mean score for ‘prosocial behaviour’ in this study (7.32) is very comparable to the mean in the UK study (8) (Meltzer et al., 2000) and is within the normal range (6-10) for the whole group. Similar to the previous scale measuring ‘peer problems’, the results suggest a perception of themselves as getting on well with peers and adults. Factor 5 in the PASS measure which assessed ‘attitude to teachers’ produced a similar figure of 81.1% (n=30) who had high satisfaction with their relationship with teachers.
5.5.3 Summary of Step One

This concludes step one of the quantitative data analysis. This step was completed to build a profile of the 39 Level 3 students engaged in the Behaviour for Learning Programme in NBSS partner schools. Standardised measures can contribute to building an insight into the perceptions of students who experience social, emotional and behavioural difficulties. Building a profile of the participating students is important in the context of this study. Gaining an insight into the client experience is a vital part of understanding the practice context.

Step two of the quantitative data analysis outlined next reports the results of the whole group comparison. The pre and post data was analysed to determine whether there was a statistically significant difference in student participant’s scores on the PASS and SDQ measures after completing the Movement Matters programme.
5.6 Step Two: Pre and Post Comparison

The rationale for conducting pre and post quantitative measures is rooted in the NBSS’s commitment to deliver an ‘evidence based’ service. The use of these measures reflects the NBSS’s positivistic approach to research in setting out to measure the ‘effectiveness’ of the Movement Matters Programme with this cohort of students.

The null hypothesis assumes that there will be no statistically significant change in the students’ scores after completing the intervention. Statistical significance for both of these tests is determined by the probability (p) value found in the final column of the results tables under Sig. (2-tailed). If the value is less than 0.05, it can be concluded that there is statistical significance between the two scores and the null hypothesis is rejected. If the score is more than 0.05, the null hypothesis remains.

5.6.1 Distribution of Data

For this study, the assumption of normality was tested using the Kolmogorov Smirnov/Shapiro Wilks test. A non-significant result (sig. value of more than .05) indicates normality. Data that was found to be normally distributed was tested using the ‘paired t-test’, while non normally distributed data was tested using the non-parametric ‘Wilcoxon signed rank sum test’. The findings of these comparison tests are found in Table 20 below.
This section reports the results of the Kolmogorov Smirnov/Shapiro Wilks test.

### Tests of Normality

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td>clmstressediff</td>
<td>.160</td>
<td>.200*</td>
</tr>
<tr>
<td>pbdiffdiff</td>
<td>.264</td>
<td>.149</td>
</tr>
<tr>
<td>phypcondiff</td>
<td>.296</td>
<td>.063</td>
</tr>
<tr>
<td>pdiffchildiff</td>
<td>.256</td>
<td>.182</td>
</tr>
<tr>
<td>pkindiff</td>
<td>.296</td>
<td>.063</td>
</tr>
<tr>
<td>t0stressdiff</td>
<td>.223</td>
<td>.200*</td>
</tr>
<tr>
<td>termstressediff</td>
<td>.214</td>
<td>.200*</td>
</tr>
<tr>
<td>tbdiffdiff</td>
<td>.182</td>
<td>.200*</td>
</tr>
<tr>
<td>thypcondiff</td>
<td>.396</td>
<td>.001</td>
</tr>
<tr>
<td>tdiffchildiff</td>
<td>.362</td>
<td>.006</td>
</tr>
<tr>
<td>tkindiff</td>
<td>.355</td>
<td>.008</td>
</tr>
<tr>
<td>s0stressdiff</td>
<td>.175</td>
<td>.200*</td>
</tr>
<tr>
<td>semstressediff</td>
<td>.294</td>
<td>.068</td>
</tr>
<tr>
<td>sbdiffdiff</td>
<td>.166</td>
<td>.200*</td>
</tr>
<tr>
<td>shypcondiff</td>
<td>.166</td>
<td>.200*</td>
</tr>
<tr>
<td>sdiffchildiff</td>
<td>.238</td>
<td>.200*</td>
</tr>
<tr>
<td>skindiff</td>
<td>.267</td>
<td>.142</td>
</tr>
<tr>
<td>factor1diff</td>
<td>.320</td>
<td>.029</td>
</tr>
<tr>
<td>factor2diff</td>
<td>.204</td>
<td>.200*</td>
</tr>
<tr>
<td>factor3diff</td>
<td>.322</td>
<td>.027</td>
</tr>
<tr>
<td>factor4diff</td>
<td>.195</td>
<td>.200*</td>
</tr>
<tr>
<td>factor5diff</td>
<td>.308</td>
<td>.044</td>
</tr>
<tr>
<td>factor6diff</td>
<td>.209</td>
<td>.200*</td>
</tr>
<tr>
<td>factor7diff</td>
<td>.169</td>
<td>.200*</td>
</tr>
<tr>
<td>factor8diff</td>
<td>.425</td>
<td>.000</td>
</tr>
<tr>
<td>factor9diff</td>
<td>.323</td>
<td>.026</td>
</tr>
</tbody>
</table>

* This is a lower bound of the true significance.

a. Lilliefors Significance Correction

### 5.6.2 PASS Analysis

This section reports the results of the pre and post intervention PASS scores to evaluate the impact of the intervention on students’ scores. This analysis was conducted using a ‘Paired Sample T-test’ for normally distributed data and the ‘Wilcoxon Signed Rank Sum Test’ for non-normally distributed data. Pre-testing was conducted prior to the intervention period which lasted 5 weeks. Post-testing was conducted in a period after the completion of the programme. The post-testing period varied between schools due to the logistical challenges faced by the qualified NBSS associate organising school visits over a wide geographical area.
5.6.2.1 Normally distributed data

As can be seen below, Table 21 outlines the results of the Paired Sample T-tests for factors 2, 4, 5, 6 and 7 as they were found to be normally distributed. There was no statistically significant change in the students’ scores, thus the null hypothesis remains.

Table 21. Results of the Paired Sample T-tests for Factors 2, 4, 5, 6 and 7

<table>
<thead>
<tr>
<th>Paired Samples Test</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>90% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired 3 Attitude to teachers PRE - Attitude to teachers POST</td>
<td>-1.40757</td>
<td>22.64381</td>
<td>3.72262</td>
<td>-9.01738 0.00226</td>
<td>-384</td>
<td>36</td>
<td>.694</td>
</tr>
<tr>
<td>Paired 5 Confidence in learning PRE - Confidence in learning POST</td>
<td>-2.67827</td>
<td>12.85588</td>
<td>2.08719</td>
<td>-6.90328 1.59374</td>
<td>-1.279</td>
<td>36</td>
<td>.206</td>
</tr>
</tbody>
</table>

5.6.2.2 Non-normally distributed data

As can be seen in Table 22 below that outlines the results of the Wilcoxon Signed Rank Sum Test for factors 1, 3, 5 and 9, there was no statistically significant change in the students’ scores, thus the null hypothesis remains.

Table 22. Results of the Wilcoxon Signed Rank Sum Test for Factors 1, 3, 5 and 9

<table>
<thead>
<tr>
<th>Test Statistics*</th>
<th>Feelings about school POST - Feelings about school PRE</th>
<th>Self-regard as a learner POST - Self-regard as a learner PRE</th>
<th>Attitudes to attendance POST - Attitudes to attendance PRE</th>
<th>Response to curriculum demands POST - Response to curriculum demands PRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-4.46b</td>
<td>-1.876b</td>
<td>-8.89b</td>
<td>-1.689b</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.657</td>
<td>.062</td>
<td>.374</td>
<td>.091</td>
</tr>
</tbody>
</table>

* Wilcoxon Signed Ranks Test
b. Based on negative ranks.
5.6.3 SDQ Analysis

This section reports the results of the pre and post SDQ scores to evaluate the impact of the intervention on students', parents' and teachers' scores. This analysis was conducted using a 'Paired Sample T-test' for normally distributed data and the 'Wilcoxon Signed Rank Sum Test' for non-normally distributed data.

5.6.3.1 Student

As can be seen in Table 23 below that outlines the results of the Paired Sample T-tests, there was no statistically significant change in the students' scores, thus the null hypothesis remains.

Table 23. SDQ Student Completion Rate

<table>
<thead>
<tr>
<th>N</th>
<th>78 (39 pre + 39 post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>76 (38 pre + 37 post)</td>
</tr>
<tr>
<td>Return rate</td>
<td>96%</td>
</tr>
</tbody>
</table>

Table 24. Pre and Post intervention SDQ (Student) comparison.

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std Error</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Pre-self overall stress - Post-self overall stress</td>
<td>0.5676</td>
<td>0.6922</td>
<td>0.6316</td>
<td>-1.1189</td>
<td>2.2540</td>
<td>0.083</td>
<td>36</td>
<td>0.999</td>
</tr>
<tr>
<td>Pair 2 Pre-self emotional stress - Post-self emotional stress</td>
<td>0.0292</td>
<td>0.1215</td>
<td>0.0595</td>
<td>-0.0527</td>
<td>0.0679</td>
<td>0.083</td>
<td>37</td>
<td>0.334</td>
</tr>
<tr>
<td>Pair 3 Pre-self behavioural difficulties - Post-self behavioural difficulties</td>
<td>0.2847</td>
<td>0.2056</td>
<td>0.3280</td>
<td>-0.3703</td>
<td>0.9559</td>
<td>0.381</td>
<td>37</td>
<td>0.484</td>
</tr>
<tr>
<td>Pair 4 Pre-self hyperactivity and concentration difficulties - Post-self hyperactivity and concentration difficulties</td>
<td>4.4737</td>
<td>1.9859</td>
<td>1.3237</td>
<td>-2.6057</td>
<td>1.1034</td>
<td>1.362</td>
<td>37</td>
<td>0.175</td>
</tr>
<tr>
<td>Pair 5 Pre-self difficulties getting along with other children - Post-self difficulties getting along with other children</td>
<td>-1081</td>
<td>1.9648</td>
<td>1.6373</td>
<td>-7.6968</td>
<td>54.386</td>
<td>-3.38</td>
<td>36</td>
<td>0.739</td>
</tr>
<tr>
<td>Pair 6 Pre-self kind and helpful behaviour - Post-self kind and helpful behaviour</td>
<td>1081</td>
<td>1.6463</td>
<td>2.7065</td>
<td>-4.4079</td>
<td>8570</td>
<td>0.369</td>
<td>36</td>
<td>0.862</td>
</tr>
</tbody>
</table>
5.6.3.2 Parent

As can be seen in Table 25 below that outlines the results of the Paired Sample T-tests, there was no statistically significant change in the parents’ scores, thus the null hypothesis remains.

Table 25. SDQ Parent Completion Rate

<table>
<thead>
<tr>
<th>N</th>
<th>78 (39 pre + 39 post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>44 (30 pre + 14 post)</td>
</tr>
<tr>
<td>Return rate</td>
<td>56%</td>
</tr>
</tbody>
</table>

Table 26. Pre and Post intervention (Parent) comparison

<table>
<thead>
<tr>
<th>Paired Samples Test</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Err</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td>-.23977</td>
<td>4.85032</td>
<td>1.34524</td>
<td>-3.16179 - 2.70025</td>
<td>-.172</td>
<td>12</td>
<td>.867</td>
</tr>
<tr>
<td>Pair 2</td>
<td>-.07662</td>
<td>2.45514</td>
<td>.68371</td>
<td>-1.56859 - 1.41275</td>
<td>-.113</td>
<td>12</td>
<td>.912</td>
</tr>
<tr>
<td>Pair 3</td>
<td>.15365</td>
<td>1.67552</td>
<td>.46473</td>
<td>-.85672 - 1.16641</td>
<td>.331</td>
<td>12</td>
<td>.746</td>
</tr>
<tr>
<td>Pair 4</td>
<td>-.07662</td>
<td>1.55259</td>
<td>.43059</td>
<td>-1.01509 - .86124</td>
<td>-.179</td>
<td>12</td>
<td>.861</td>
</tr>
<tr>
<td>Pair 5</td>
<td>-.07662</td>
<td>1.70595</td>
<td>.47314</td>
<td>-1.10782 - .95397</td>
<td>-.163</td>
<td>12</td>
<td>.871</td>
</tr>
<tr>
<td>Pair 6</td>
<td>.15365</td>
<td>1.61871</td>
<td>.50442</td>
<td>-.94519 - 1.25208</td>
<td>.305</td>
<td>12</td>
<td>.766</td>
</tr>
</tbody>
</table>
5.6.3.3 Teacher

The Behaviour for Learning teacher who facilitated the Movement Matters Programme with the students completed this measure. The teacher SDQ data was assessed using both parametric and non-parametric tests due to the distribution of the data returned. The results are outlined in Tables 28 and 29 below. As can be seen in the tables that outline the results of the Paired Sample T-tests and the Wilcoxon Signed Rank Sum Test, there was no statistically significant change in the teachers’ scores, thus the null hypothesis remains.

Table 27. SDQ Teacher Completion Rate

<table>
<thead>
<tr>
<th>N</th>
<th>78 (39 pre + 39 post)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>55 (31 pre + 24 post)</td>
</tr>
<tr>
<td>Return rate</td>
<td>71%</td>
</tr>
</tbody>
</table>

Table 28. Results of the Paired Sample T-tests of normative Teacher pre & post data

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Error Mean</td>
<td>Lower Upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1: Pre-teacher overall stress - Post-teacher overall stress</td>
<td>.23913</td>
<td>.363862</td>
<td>-.1.51842 1.98461</td>
<td>263</td>
<td>20</td>
</tr>
<tr>
<td>Pair 2: Pre-teacher emotional stress - Post-teacher emotional stress</td>
<td>.04545</td>
<td>.176558</td>
<td>-.74623 .33714</td>
<td>219</td>
<td>21</td>
</tr>
<tr>
<td>Pair 3: Pre-teacher behavioural difficulties - Post-teacher behavioural difficulties</td>
<td>.31818</td>
<td>.200916</td>
<td>-.5.7284 1.20900</td>
<td>.743</td>
<td>21</td>
</tr>
</tbody>
</table>
Table 29. Results of the Wilcoxon Signed Rank Sum Test of non-normative Teacher pre and post data.

<table>
<thead>
<tr>
<th></th>
<th>Post-teacher hyperactivity and concentration difficulties - Pre-teacher hyperactivity and concentration difficulties</th>
<th>Post-teacher difficulties getting along with other children - Pre-teacher difficulties getting along with other children</th>
<th>Post-teacher kind and helpful behaviour - Pre-teacher kind and helpful behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-1.780&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-0.619&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-1.276&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>0.075</td>
<td>0.536</td>
<td>0.202</td>
</tr>
</tbody>
</table>

<sup>a</sup> Wilcoxon Signed Ranks Test  
<sup>b</sup> Based on positive ranks.
5.6.4 Interpretations

Step Two of the quantitative data analysis reported no statistically significant differences in the pre and post intervention scores of the PASS and SDQ measures. Should it be assumed from this finding that the Movement Matters Programme offers no benefits to the students engaging with it? There are a number of factors that may have influenced an insignificant statistical finding and confirmation of the null hypothesis.

1. The sample was relatively small (N=39).
2. The behaviour patterns of Level 3 students are well established and changes may take time to be effected and noticed.
3. The post intervention testing occurred at various times and in some cases many weeks after the conclusion of the programme. This was due to the independent NBSS associate having to coordinate the visits to the schools all over the country at times that suited the various teachers and students.
4. The completion rate of the SDQ parent (56%) and teacher (71%) measures was particularly poor reducing the data further from an already small sample size.
5. The Movement Matters Programme was not specifically designed to affect change in the particular factors of the PASS and scales of the SDQ measures.

A conclusion on the value of an intervention or programme should not be reduced to a single research method. Fox (2003) recommends that evidence based practice be supplemented with practice based evidence.

Part Two of the Results Chapter will therefore report the findings from the three semi structured group interviews with the occupational therapists who developed and observed the programme in use. Some of this data may explore issues of capturing change related to the Movement Matters programme.
5.7 Summary of Objective Two

This concludes Step Two of the quantitative data analysis and Objective Two of the Results Chapter. This section reported the quantitative data collected and informs the study as it outlines a profile of the students from the practice context against the ‘normative’ data generated in a large scale UK study. This profile of ‘Level 3’ students in Irish post primary schools offers a new perspective on their experiences not documented previously. The second step of this quantitative aspect was to test the hypothesis that changes, if any, from participating in the Movement Matters Programme would be measured by the standardised measure, selected by the NBSS as part of the positivistic research perspective. No statistically significant changes were noted.

Part Three now reports qualitative data in the form of three semi structured group interviews that present the clinical reasoning processes of the two occupational therapists who developed and observed the programme in use.
5.8 Objective Three: Qualitative Data Analysis

5.8.1 Introduction

The third part of the Results Chapter reports qualitative data in the form of semi-structured group interviews. This data informs Objective Three of the study which is to map the clinical reasoning processes of the occupational therapists who developed and observed the Movement Matters Programme in use. This third objective contributes to the overall aim of the study of understanding occupational therapy practice development within an emerging area as it uncovers the therapists reasoning and provides insight into the way they practice within the setting.

The researcher, as an occupational therapist brings a pragmatic perspective in the form of this qualitative data to supplement the positivistic perspective (quantitative data) of the NBSS. This data was collected over a 12-month period (December 2014 – December 2015) in three semi-structured group interviews. The participants in these semi-structured group interviews were the two occupational therapists from the Movement Matters team, one of which is the researcher. The other participant occupational therapist was a colleague who had contributed to the development of this and earlier programmes, and had an expertise and post graduate qualification in sensory integration interventions. The group interviews were facilitated by the coordinator of the occupational therapy service, who was also an academic in occupational therapy. The role of the facilitator was to initiate discussion amongst the two participating occupational therapists with questions based on themes agreed upon previously between the researcher and the facilitator. The facilitator then acted as an observer and posed any additional questions she considered would result in deeper understanding of a topic being discussed. The participants and facilitator shared a common language and is evident in the transcripts of the interviews. This is due to their long standing professional relationship and familiarity with the field of study.

The method of Interpretative Phenomenological Analysis (IPA) (Smith et al., 2009) influenced analysis of the data collected in the semi-structured group interviews. IPA combines a dedication to understanding the ‘lived’ experience of the participant with a belief that to achieve such understanding requires interpretative work on the part of the researcher and it offers a systematic approach to doing this (Smith & Osborn, 2003). Clarke (2009) recommends IPA as a useful method for aiding occupational therapists in understanding the link between occupation and health and well-being. IPA can help
occupational therapists develop deeper understanding of the experience of colleagues which facilitates reflection on practice which can lead to enhanced service provision (Clarke, 2009). Phenomenology strongly influences the IPA method and is a good fit with occupational therapy philosophy on client uniqueness and context specific knowledge.

Quinn & Clare (2008) explain that there is no rigidly defined way of conducting IPA and their seven stage model of analysis was followed.

Stage one: Reading the transcript.

Stage two: Making Margin notes.

Stage three: Summary list of margin notes.

Stage four: Grouping of margin notes into thematic areas.

Stage five: Left margin codes.

Analysis across interviews

Stage six: Full listing of theme summaries.

Stage seven: Grouping of theme summaries.

Figure 36 presents the sequential process of thematic development influencing each subsequent group interview.
Once themed, the data from the interviews is presented in a “let the data speak for itself” style.

The first semi structured group interview held in December 2014 asked questions about the background to the development of the Movement Matters Programme including the previous experience of the occupational therapists and the theory that informed the programmes design.

The second semi structured group interview held in May 2015 asked questions about the structure of the programme and any changes that were made after the first pilot and trial.
It also asked questions about the review process and how the implications of this review affected the plans for the programme going forward.

The third semi structured group interview held in December 2015 asked more questions about the review process and structural changes to the programme and how teachers who facilitate the programme are supported.
5.8.2 First Semi-Structured Interview

Context of Interview

The first semi-structured group interview took place in December 2014 which was just over one year since the first trial of Movement Matters. It was conducted sitting around a table in the office from which the occupational therapy team planned their work. Each interview lasted one hour. The participants had recently trained a group of teachers in the programme who would be part of the NBSS’s national pilot of Movement Matters in the 2014/2015 academic year. They were supporting teachers and students in numerous schools around Ireland on a weekly basis at this time.

Themes

The first interview held in December 2014 asked questions about the background to the development of the Movement Matters Programme including the previous experience of the occupational therapists, and the theory that informed the programmes design. Eight main themes were identified as outlined in the figure overleaf. Each of these themes have subthemes which are described in the following pages.
Figure 38. Overview of themes from the First Semi-Structured Group Interview.
5.8.3 Movement

‘Movement’ was identified as a main theme with four subthemes outlined below and described in detail after.

5.8.3.1 Movement as a Tool

The data indicates that the appreciation of the use of movement emerged from the ‘interpersonal skills groups’ that the therapists facilitated during the early days of practice in the NBSS. Participant 2 (P2) describes the context and emergence of movement as an important factor.

P2: We were running interpersonal skills groups in kind of, sports hall type facilities in the schools, working around kind of increasing kind of cooperation skills, participation skills, amongst mostly first year students who had social, emotional, behavioural difficulties. And we would have really noticed how during their kind of normal school day in the classrooms how so many of them would have struggled with attention, concentration, focus on a lot and you know, from observing them in class there would have been a lot of movement going on in class that was causing difficulties for teachers to deal with.

Participants were keen to emphasise that movement was not a central goal in the group work, but rather a method to promote participation of group members.
P1: It was only ever used as to that medium, it never was a goal, we never used movement ever as a goal in itself, it was only ever, if you look at any of our objectives and all of our group work it is never ever, whilst it was an interest, it was an integral part of it, it was never an aim or an objective at any one stage…It was merely a means to an end…we still had our aims and our objectives for each session were not around movement, they were around you know the social inclusion, so we used movement and look, the other pieces, and you know, give them the opportunity, so we found that it created a good atmosphere, it created that atmosphere of improvement, of comradery.

P2: That’s what we really kind of found, the real benefits of that kind of purposeful movement breaks prior to doing a more kind of cognitive task.

5.8.3.2 Movement Breaks

Participants made numerous references to the importance of movement in self-regulation and how the students they were working with needed to move regularly during their school day.

P2: We would have noticed the need for you know, purposeful movement, for movement breaks and that kind of sensory integration background stuff in the schools that we were working in at the very very beginning…we recognised that, that students definitely needed that kind of sensory input that the movement gave them, to kind of calm and regulate themselves…and we would have really noticed how during their kind of normal school day in the classrooms how so many of them would have struggled with attention, concentration, focus…it was very kind of evident that the students were moving because they needed to move and they weren't getting that…we felt very strongly that their systems were in need of movement included to help them to focus and to concentrate.

5.8.3.3 Movement as Motivation

Movement is identified in the data as an important motivator for student engagement and participation.

P1: We’d have used it (movement) straight away in our early group work…we found that it was, you know it’s a “buy in” as well, it’s more than that because, it’s something that they want to do, so you’re making a bit of a contract there from the beginning, we do a bit of this because we know that, we felt very strongly that their systems were in need of movement including to help them to focus and to concentrate, but on top of that it’s also,
it’s a recognition that this is something that they were interested in and sort of, there was a bit of bartering going and they could do this for 7 minutes and then you know what…we’ll go back to something again, and that ebb and flow, that partnership.

5.8.3.4 Observing Movement Offers New Perspectives

Participant 1 found that observing students outside of the classroom engaging in movement provided her with a perspective on the student’s development and functioning that was not available in the classroom setting.

P1: When you’re working around movement it does give you another, another whole other kind of perspective that you will not get from when sitting at a desk, you see how they put together movement and how the left hand side of the body works or the right hand side or how the top half and the bottom half, you get a bit of an insight into how that coordinated feeling, that organisational, so you can see, you can see straight away the different patterns of movement and where the gaps are, as well as where the strengths are as well, and where you know that they, that they would benefit from.
5.8.4 Circuits

‘Circuits’ were identified as a main theme with four subthemes outlined below and described in detail after.

5.8.4.1 Regulating Energy Levels

The data indicates that the therapists used circuits involving short, intense movement within the interpersonal skills group interventions as a method of regulating energy levels and supporting engagement in the occupations of the session.

P2: *Doing ladder work, hurdles, kind of quick bursts of sprinting from cone to cone, using medicine balls or weighted balls, for kind of bowling pins, using weighted balls with bowling pins, then a press up station or a squats station, and the effect that that would have on the student after say three rounds of circuits, the effect that that would have on the quality of the work, Lego work, poster work, fine motor work that they used to do at the end you could really kind of see the benefit of it.*

P1: *It created that atmosphere of improvement, of comradery, of a little bit of exhaustion in there, a dampening down that they could actually access, you know the other things we needed them to or we were hoping, and the wish for them to be able to access…*
proprioceptive tactile input then what we’re informed in SI literature is that did have a dampening effect on your senses.

5.8.4.2 Just Right Challenge

Participant 2 attributed the success of the circuits to achieving the just right challenge when designing the circuit route to suit all skill levels.

P2: What stands to us as well was getting that just right balance piece around the movement cause we had such a kind of wide variety of skill levels in front of us…we had eight students, you know, there would have been one or two that were very competent, that were used to you know, that did play sports a couple of times a week, and that were you know, well-coordinated, and maybe one or two who did have good core strength and then all the way down to guys who were very very, you know really displaying kind of that kind of dyspraxic sequencing kind of problems with movements… they’re failing a lot in, academically in class because the curriculum is at a little bit of a too high level for them, they’re very used to that cycle of failure.

5.8.4.3 Mastery Experience

The data suggests that the just right balance in the challenge aimed to promote group engagement and mastery experience.

P2: You really had to kind of develop those circuits in a way that they could all kind of access it and really kind of get a piece of, a piece of, that feeling of success, that feeling of getting better and doing something right… they will know when they have gotten better cause their time is better and they know that they’ve gotten from that cone to that cone, that they’ve gone through a ladder and gotten the ladder right, or they’ve knocked down the bowling pins at the bowling station or whatever, or they’ve done the 10 press ups that they need, that they were only able to do five the week before, they really kind of get that sense of progress and achievement

5.8.4.4 Peer Encouragement

Participant 2 refers to the positive social environment created during the circuits.

P2: What happened was the, the stronger kids would start kind of, you might have maybe kind of cynically expected some, a bit of kind of jeering or a bit of slagging, but what would happen was, it was real nice, they’d have kind of, support and encouragement from the people watching, cause one person went at a time, so the person was kind of like having
an audience of the other kids viewing, and that was due mostly because the, the people who had gone previously were quite tired, kind of worn out from doing the circuit, so they were kind of regulated to kind of sit and watch things, and everyone got a chance to kind of show their stuff.
5.8.5 Therapeutic Use of Self

‘Therapeutic use of self’ was identified as a main theme with three subthemes outlined below and described in detail after.

5.8.5.1 Therapist Skill Sets

Both participants refer to their skills/roles outside their positions as occupational therapists and how this experience contributed to their professional practice.

P1: I was the ‘mummy’ figure, I can say that I absolutely participated in every single bit the same as the lads, and I wasn’t quite as good as the lads and that was only a relief then, and that’s ok, but sometimes then I was better, and I certainly didn’t, I certainly didn’t pretend if I couldn’t do it, they knew I was trying hard, and sometimes I was better than them, sometimes I could pull out a really good score and then it was “good on ya” as well as “ah go on and have another go” kind of thing.

P2: We both come from sporting backgrounds as well, I think we both knew ourselves you know, the effect of frequent training and the satisfaction of training, and how, I suppose importantly as well how to run a session as well, because running a movement session is all about momentum, it’s all about knowing when to change an activity, it’s all about kind
of knowing what’s right, what feels right, what looks right as well, and we both kind of come from that background…there is a skill set involved with running movement that is a little bit different, and possibly as you say, possibly a fun form of a background of movement or comfort around movement and commitment to movement possibly needs to be in there.

5.8.5.2 Understanding Each Other’s Strengths

Both participants make reference to each other’s strengths and how the integration of these skills contributed to the therapeutic environment.

P2: *Myself and [name of P1 removed] we were working together in those groups, we know our own skills and we know what kind of what we bring to the party as such, so we got to work off each other when we were doing that kind of work stuff.*

P1: *I think that [name of P2 removed] and I definitely played off our strengths, we work very well as a team that way, because if it had of been just [name of P2 removed] it would have been difficult because you would have had to pretend to not do it as well and they know that, so you can’t, you can’t pretend, you’re allowed to go in and do it properly, so it was kind of nicely bookended between the two of us.*

5.8.5.3 Co-occupation

The importance of the occupational therapy facilitators participating on an equal level with the students was identified as important factor in promoting whole group participation.

P2: *I think as well because myself and [name of P1 removed] were so involved in actually doing the work, we weren’t laying out the circuits and saying right this is what you do here, we were actually, we did it, we actually participated, sat down, press ups, squats, or whatever it was, so we came back worn out as well, so we were included, there was a time board and we were included in the timings and there was a great competition amongst us so there was a real kind of, I do, you do.*

P1: *It’s all about confidence, it’s all about commitment, if you’re going to run something like that, you need to commit to it, and probably [name of P2 removed] would find that less so than me, but as a kind of middle aged female, if I’m going to stand up and say “right lads, we’re going to do this”, I need to be 100% on board for it because if you falter, then they’re just not going to see it as anything that they want to do and it’s value then, so you need to kind of dive.*
P2: That kind of peer modelling and that kind of stuff going on which they seemed to really kind of, and I knew that myself, being a kind of a young male, that the lads would kind of look up to me and kind of follow what I was doing.
5.8.6 Sensory Integration

‘Sensory Integration’ was identified as a main theme with three subthemes outlined below and described in detail after.

### 5.8.6.1 Theory to Practice

The data indicates the participants placed value in sensory integration theory and found it relevant in the practice context.

P2: *I suppose our understanding of that certainly comes from our training, our undergrad training as well, really I suppose the post grad training in sensory integration and we were learning more and more about that and the relevance of it in the post primary school setting… we knew that from theory, from (participant 1) doing her SI training that she was embarking on at that stage, so we knew that the theory was there, we really wanted to put that into practice and we could really see the benefits.*

It is evident from the data that this sensory integration theory was central to the design of the Movement Matters programme. Participant 1 and 2 both refer to this.
P2: We knew from the SI literature that it had to be intense and frequent, so it had to be basically every day for a period of time, say 20 minutes, from the literature that’s what we identified, so we knew it had to be daily, it couldn’t be weekly, it just wouldn’t have the effect.

P1: We focused on it first and foremost with the SI, because if this is, if this is what the literature says works, can we, can that transfer, can we bring that into the school environment?

Participant 1 refers in more detail to the theory that informed the design of the Movement Matters session plans.

P1: The SI that we are trying to deliver in the programme is around the proprioceptive, proprioceptive and tactile which are very closely linked, and the vestibular, so we’re looking at, we’re looking at the programme has 4 main elements. It has a prone extension element, and a supine flexion element, and those are really kicking in for those basic primary proprioceptive postures, and then it has a bilateral coordination element, and it has an equilibrium, so postural element, so you’re really, you’re bringing in a lot of proprioceptive tactile input.

5.8.6.2 Modulation

Numerous references to modulating arousal levels appears in the data with both participants considering it important as a goal of the programme and a result of receiving proprioceptive and vestibular input.

P1: Vestibular, the proprioceptive tactile input then what we’re informed in SI literature is that did have a dampening effect on your senses…and it has an organising effect on the sensory systems, so it will support them then going forward in the rest of the day…the vestibular system is one of the primary systems, and if your vestibular system is not functional optimally it has a very destabilizing effect on the rest of the systems.

P2: (in reference to vestibular system) especially on arousal levels…one of those key structures that regulates the arousal levels. It’s modulation, it’s not sensory integration therapy.
5.8.6.3 **Framework for Understanding Behaviour**

Data contributed by both participants suggests that the sensory integration framework was used as a lens for viewing challenging behaviour and not as a diagnostic tool. While, the theory was central to the development of the Movement Matters programme, participant 1 is eager to point out that;

P1: *In no way is this sensory integration therapy, and we completely recognise that this is not SI, or ASI… this is just a lens, it’s just the sensory integration framework is how it was coming up, but it is a lens, it’s another lens format, and we certainly do not attribute the sole difficulties of a student coming to this programme around SI.*

P2: *we never talk to teachers about sensory processing disorders, we never run a session with the students, we never diagnose anyone, it’s just a language or a framework that you view a child’s behaviour in, and that’s really important.*
5.8.7 The Alert Programme

References to the ‘Alert Programme’ appear frequently in the transcript and is evidently important in the context of the development of the Movement Matters programme. This was identified as a main theme with four subthemes outlined below and described in detail after.

Adapting for the Irish Context

The data reveals that at the same time that the participants were running the interpersonal skills groups as described earlier, they were trialling and adapting the ‘Alert Programme’ and “developing it in the Irish post primary schools setting on a national scale” (participant 2).

P2: It was very evident, especially from our perspective after going to the training [Alert Programme training run by USA OTs], that it would be very challenging to bring it in successfully into the Irish post primary school setting, you know, mainstream, areas of social disadvantaged, that’s the tone of it, the language, all that kind of stuff, it just wouldn’t suit the students that we would be working with…the content was brilliant, we knew that, the theory behind it was solid, we just knew that we’d have to adapt it before bringing it to the teachers.
5.8.7.2  Teacher Buy-in

Participants reported that teacher selection for trialling the new Movement Matters Programme was important and that those who had experience of using the ‘adapted’ Alert Programme and valued it as a resource were most suitable partners for this new collaboration.

P1: *We’d worked with enough of the BfL teachers around the schools that they were confident, they had run the Alert Program, they’d seen the benefits of that, and they were confident enough with what we brought to the table.*

Similar perspective from participant 2.

P2: *It was seen through doing the Alert that there was a huge, there was a change of attitude amongst teachers who had done the Alert about the way they looked at students and viewed their behaviour.*

Participant 2 refers to the importance of collaborating with teachers who appreciate the sensory perspective from using the Alert Programme in their practice.

P2: *We only picked teachers who had done the Alert and had that understanding, it was equally as important that teachers understand why they’re running the Movement Matters programme as it is for the student that’s doing it, the teachers have to stand over the programme, have to be able to advocate for the students in the school, they have to be able to tell other staff members why the students are doing the programme and maybe the benefits to that student as well, so that’s really really important as well.*

5.8.7.3  NBSS Model of Support

The NBSS model of support is explained in the data and the adapted Alert Programme’s place within this model is outlined. The new Movement Matters Programme is considered to be an appropriate Level 3 intervention.

P2: *It fitted into the model of support really well, so if you, the model of support is three levels, Level 1 being whole school support, Level 2 being targeted intervention and then Level 3 being intensive individualised support, so we felt that the [adapted] Alert programme was actually really good Level 2 intervention that you could do with whole class groups, whole year groups even maybe, and that is was this new movement*
programme would really benefit that small group of students that needed that intensive individualised support on a daily basis, so it fitted in really really well with the whole model of support.

5.8.7.4 Session 3

Session 3 of the Alert Programme is discussed as important in informing the development of a more specific movement programme due to the shortcomings of the movement strategies taught within this session for some students.

P1: There is a movement session, and from that we could see pretty quickly that whilst the movement session for the majority of your students, had a good piece and was delivering what it needed to do, so there was a selection of students where it just wasn't enough by a long way. And then you could see that they were responding to the movement, but that a couple of chair push-ups was never going to cut it, that they needed much bigger, more intense frequency of you know, of this movement. But also it made sense from an SI point of view, moving on from the Alert Programme anyway, so we then kind of said well oh yes, we need something more.
5.8.8 Designing Movement Matters

‘Designing Movement Matters’ was identified as a main theme with two subthemes outlined below and described in detail after.

5.8.8.1 SAQ

The data indicates that while the occupational therapists hold movement and sensory processing theory at the core of their practice, the NBSS also recognised the relevance of movement within the area of challenging behaviour before occupational therapy involvement through trialling the Speed Agility Quickness (SAQ) programme.

P1: They’d already been running that SAQ program. They’d recognised that movement patterns were important...there’s a programme called SAQs, speed, agility and quickness, and they had invested in trainers coming over from UK, and had taken the PE teachers from a lot of their schools to be trained in it, and had bought the equipment, which was basic equipment like hurdles and ladders and things like that, so they had seen, they had seen some success with that also, but it was a programme that wasn’t really holding in a very sort of strong way, some schools it was there doing quite well.
P2: It was very much a Level 1 intervention, so it was being run with whole year groups and that kind of thing…the programme was really designed for professional sports teams, so it wasn’t specifically designed for the post primary school settings…it had a purpose, and it was good because it kind of opened up people’s eyes to the value of movement.

5.8.8.2 The Environment

The data indicates that the physical environment of the practice context was central when designing the programme.

P2: We needed something far more relevant and applicable and kind of practical as well, practicalities in our work is really what it comes down to, can a teacher pick it up and do it in an environment such as the behaviour for learning room, you know, what’s called a classroom sized room in the space of 20-30 minutes and put the equipment away and continue on with their day, that’s really what it comes down to.

The participants report challenges in trying to comply with what the sensory integration literature recommends and what was possible within the physical and organisational environments of post primary schools.

P2: Timetabling issues as well, so where does that fit…we knew from the SI literature that it had to be intense and frequent, so it had to be basically every day for a period of time, say 20 minutes. From the literature that’s what we identified, so we knew it had to be daily, it couldn’t be weekly, it just wouldn’t have the effect, so we recognised that it had to be very practical in that sense because if it was going to be happening every single day it would have to be easy for the teacher to administer and also easy for other teachers in the school to accept, because a lot of teachers, you know there’s only one or two teachers in a staff that work with these students in the behaviour for learning classroom. And many of the other teachers mightn’t be aware of that work, so it has to not impact on other teachers’ teaching time too much as well, that was important, if a student was missing for 20 minutes out of a class.
5.8.9 Student Reflection

‘Student Reflection’ was identified as a main theme with two subthemes outlined below and described in detail after.

5.8.9.1 Cognitive Element

Participants report that student reflection is a key part of the Movement Matters programme. This ‘cognitive element’ of the programme relates to the students reflecting on their level of arousal before and after completing a session of the programme.

P1: The cognitive piece around the Movement Matters is very important, and with that in mind, one of the things they do when they first come into the class is there’s a rating scale. And they get to rate themselves from being “chilled out” to being “very hyper”, and they look at the smiley faces and see well, where you are right now, and they choose that, and at the very end of the session before they leave, they get to re-evaluate themselves again, so where are you now. And then they’re able to see, and then you can see, oh wow, you’ve changed.

5.8.9.2 Influence of Alert [adapted Alert Programme]

Participants are eager to refer to the Alert Programme’s influence in building this insight students have of their arousal states.
P2: Because a lot of the students who we would be targeting with the Movement Matters Programme already have done the Alert Program, and that’s really important that there is that piece of kind of insight, and that piece of kind of self-efficacy and mastery around knowing why you’re doing what you’re doing. So instead of just coming into a room and just doing some exercises, you know why you’re doing it.

It emerges from the data that students develop awareness around what is needed in order to regulate their systems from their learning of the Alert Program.

P2: I’ve heard a lot in the schools kids using language like “this is for my ADHD” or “this is good for me” and this kind of stuff, so they know that they have “engines” and sometimes that runs high, that they’re really highly aroused, and they’ve learned that from doing the Alert Program, but what the Alert Programme didn’t give them enough of was how to get their engine back into “just right”, how to get their arousal levels back to a quiet level. So they know what they’re coming in here to do more work to the Movement Matters Programme to get their engines back to a quiet rate, so that they walk out the room back to their class in a more kind of calm, focused manner.
5.8.10 Support Structure

'Support Structure' was identified as a main theme with three subthemes outlined below and described in detail after.

5.8.10.1 Weekly visit

A weekly support visit was found to be central to the role out of the programme in schools due to the intensive nature of the programme.

P2: Movement Matters team provide a one day a week co-facilitation or supervision, it’s a process of facilitation, and you’d be in contact with the teacher on a weekly basis in between, so if there’s any issues arising, with the teacher not being sure of the session plan or what the movements are.

5.8.10.2 Collaborative planning

The weekly visits offered excellent opportunities for problem solving and collaborative planning between the occupational therapists and teachers.

P2: In the schools it's more of a problem solving exercise you know, if a teacher wants, would like you to take a certain exercise so she can observe, so the teacher can observe
you doing the exercise for their own learning or they’re just uncomfortable with a particular one, you know you could take that. And then there’d be a little kind of de-brief afterwards about how things had gone the week before, you know, if a student’s particularly challenging, advice around that, then kind of looking at the sessions coming up in the following week.

The data also reveals how important the participants perceive this weekly support is to the teachers and consequently students. It is also evident that the pressure of this intensive support may be challenging to sustain.

P:1 We need to continue to be collaboratively working with our teachers…because it’s not about the program, because it’s about the students taking the program, and genuinely for them to get something out of it, we’re not just ticking a box here. It’s a massive investment from the teacher’s point of view as well in their time and resources, and both from our point of view as a Movement Matters team we need to continue to support them, and that has thrown up some challenges. And I think we do need to look and say, well how do we continue to do that, it’s difficult to make those decisions on your own.

5.8.10.3 Client centred practice

The data reveals that the weekly support visits afforded the participants to be client centred in the manner in which the programme was delivered with individual students depending on their presentation.

P1: I had in one of my schools, a little lad who needs much more, he needs much less of the bilateral coordination and much more of those heavy postural holding positions. He needs much more dampening down, so what we’ve done, so he still gets it, but what I’ve said, rather than, the programme is designed with the prone extension first and the supine second, then bilateral, then equilibrium…what we’ve done is we’ve taken one of the first clusters and put it with the back ones…he can’t leave having been bouncing around the equilibrium, that’s not working for him… so he needs to go into some heavy heavy supine flexion before he leaves, he needs to “hurt” for want of a better word, he really needs that very very strong piece.

Participant 1 also refers to the importance of timetabling the Movement Matters session at the right time for individual students to target times when they struggle with self-regulation or would benefit from not being in a particular environment.
P1: Then trying to keep it to be client focused, to point out, you know, well what times of the day did they “kick off”, and can that, can we try to build it around times where they really are supported through those difficulties, or maybe some specific classes, maybe there’s a specific class where just things are not going well for them and maybe that’s a class they need to be doing something different in or whatever. So yeah, it was a built in collaboration with the teachers to see what times would best work.
5.8.11 Summary Interpretation

The first semi structured interview provides the background to the development of the Movement Matters Programme including the practice experience and theory that informed its design and the unique skills of the therapists that were involved in its development. The following is a summary of my interpretations of the data from the first group interview.

- Movement was identified in the early stages of the participant’s practice as a valuable tool for increasing engagement and participation of students and as a method to manage arousal levels.
- The use of ‘circuit exercises’ during the group work they facilitated was found to be an effective method of regulating arousal levels by students who presented with challenging behaviour. These ‘circuits’ delivered short, intensive movement to students and facilitated them to experience mastery in a supportive social environment.
- Key to the success of using movement was the therapists' skill sets developed in occupations outside their professional training. Their innate clinical reasoning and interpersonal skills promoted student participation in the group through modelling and was supported through a deep understanding of each other’s personal and professional strengths.
- Sensory integration theory was a strong influence on the participant’s practice and strongly informed the initial concept of the Movement Matters programme.
- It is apparent from the data that the ‘adapted Alert Programme’ had a major influence on the emergence of the need for a specific movement programme. The Alert Programme was deemed a successful intervention because of its adaptation for the practice context, its fit with the NBSS model of support and the teacher ‘buy in’ to the theory and strategies.
- The environment of the practice context had to be considered in the design of the new programme. The physical environment of the Behaviour for Learning classrooms presented physical issues. However, the NBSS’s previous use of the SAQ movement programme had already challenged the cultural environment of schools where movement as part of learning was not appreciated.
- Student reflection is a key part of Movement Matters with the Alert Programme playing a central role in developing student insight and awareness of their arousal states and readiness for learning.
• The support structure is key in ensuring a client centred intervention is achieved through weekly visits involving problem solving and collaborative planning for individual students.

• From the outset, the collaborative nature of the relationship between the occupational therapist and student and between the occupational therapist and teacher appears to be a fundamental aspect of this new programme.

**Clinical Reasoning**

- The main modes of clinical reasoning (Fleming, 1991) evident in the data of the first semi structured group interview are conditional, interactive and procedural. The participants demonstrated their conditional reasoning in their understanding of the students’ social and cultural contexts and their interactive reasoning was evident in their use of their personal and professional experience to motivate and engage the students. The influence of sensory integration theory on the design of the Movement Matters Programme and observation of that theory in practice is evidence of the participants’ procedural reasoning.
5.8.12 Second Semi Structured Interview

Context of Interview

The second semi structured group interview took place in May 2015 as the academic year in schools was concluding. At this stage, the Movement Matters Programme had been used in practice for two full academic years and the participants had delivered five training workshops to 50 teachers. This period also signified the end of the NBSS’s national pilot research phase.

Themes

The second semi structured group interview held in May 2015 asked questions about the structure of the programme and any changes that were made after the first pilot and trial. It also asked questions about the review process and how the implications of this review affected the plans for the programme going forward. These questions were developed from the analysis of the first transcript to deepen the exploration of the clinical reasoning. Eight main themes were identified as outlined in the figure overleaf. Each of these themes have subthemes which are described in the following pages.
Figure 39. Overview of themes from the Second Semi-Structured Group Interview
5.8.13 SAQ

‘SAQ’ was identified as a main theme with four subthemes outlined below and described in detail after.

The interview facilitator was interested in the timeline of the Movement Matters Programme development and what was occurring in the participants practice at the time. Participant 2 identifies the NBSS’s decision to review the Speed Agility Quickness (SAQ) programme as the starting point for the development of the new movement programme.

5.8.13.1 Background

Participant 2 describes the roots of the programme in sporting contexts and how the programme was used in schools with whole class groups of students.

P2: *Its developed for a sporting context, for teams, so the model they used to use the SAQ with was with PE teachers, with you know whole class groups…you’d have twenty or thirty kids coming into a hall and using it. Now I’m sure that at the time you were to look in you’d probably have, you’d see a great diversity of skill levels and ability levels doing because its quite a broad programme. It’s not tailor made for individual kids. So I’m sure a lot of...*
kids would have struggled with elements of it and eh there would have been a lot of kids who would have absolutely loved it who would have been quite sporty anyway and quite capable but I’d imagine it was a Level 1, it really was a Level 1 intervention, it was not targeting the Level 2 and Level 3 students and giving that intense input.

5.8.13.2 Programme Review

The data shows that an NBSS team member from a Physical Education background was tasked with reviewing the use of the SAQ programme in schools to establish its relevance for Level 3 students.

P2: It was probably early 2013, when the National Coordinator kind of said we want to start reviewing the SAQ programme and seeing are we going to continue on with this…and is there something better we can do other than the SAQ and is the SAQ sort of serving the needs of the kids…that project started kicking off at that stage and (name removed) the RDO the PE teacher was kind of tasked with reviewing the SAQ wasn’t she? And sort of gathering information on whether it was fit for purpose in the schools from a teachers perspective.

Participant 1 refers to NBSS’s commitment to movement as part of the approach to supporting students and teachers manage behaviour despite the evidence that the SAQ programme wasn’t being widely used in school.

P1: They had already committed quite a lot of schools to it, and the time and the training, so it seems that whilst it wasn’t really working or more like it wasn’t really working within the NBSS model, they definitely wanted to do something with it, they knew that there was something there with it but how could they take that and actually make it work for them as a service.

The participants recognised the misfit of the SAQ programme with the needs of a Level 3 student but brought its principles in conjunction with the Alert and sensory theory forward in the design of the new programme.

P1: It was far too big, it was just never going to work at that level. So we took from that then and built on the Alert, moved on from the Alert, brought our SI principles and started applying them to that movement programme…why supposedly does that movement programme supposed to work? How could we make that into a Level 3 intervention that would be good for our lads and lassies?
5.8.13.3 **Sensory Connection**

The participants recognised the link between the theory in the sensory integration literature and the movements executed in the SAQ programme. This resonated with participant 1 in particular as she was competing postgraduate study in sensory integration at the time, recognising that some of the existing movement in SAQ could form part of the new programme under design.

P1: *It linked in with the SAQ work because there’s a lot a bilateral work that they do there and again they do a lot of that motor planning, sequencing, timing…so there was a nice sort of overlap, we could definitely see there was an overlap, we could see that the SAQ didn’t really know why it was working, but yet it was, so they were doing a sensorimotor piece. So we were able to link the kind of theory behind SI or some of SI or more kind of the sensorimotor end of SI to what was happening in SAQ and seeing that there was a nice piece there that could overlap into a programme for a one on one or two to one Level 3 intervention.*

5.8.13.4 **Support Structure**

The ‘generic’ nature of the intervention and the lack of any follow up support after teachers received training was identified as a major reason behind the sustainability problems of the programme.

P2: *But one of the issues with SAQ was definitely that it wasn’t an in house development. I suppose and the person that was training the teachers was coming from the UK and there wasn’t weekly or intensive support from an expert.*

Facilitator: *or mentoring?*

P2: *Or mentoring exactly so the teachers were trained in the programme, they went off for a whole term and wouldn’t hear anything from anyone really, now they were researching it so they were following fidelity checklist and different things because the NBSS wants to track its success. So they were definitely being followed in that sense but they didn’t have someone to support them on a weekly basis. So it was a very sort of generic programme.*
5.8.14 Use of Sensory Theory

‘Use of Sensory Theory’ was identified as a main theme with four subthemes outlined below and described in detail after.

The participants demonstrate through the data that they have a good knowledge base within the sensory integration framework and are able to select the relevant aspects of the theory for application in their practice setting. The detail of the discussions about theory and its application demonstrates their level of reasoning.

5.8.14.1 Neuroanatomy

Participant 1 identified the neurological pathways as key structures in the sensory integration theory which affect arousal.

P1: The learning I was taking from those modules were suggesting that there were some crucial components within SI that would be looking at those sort of neurological pathways, and they’re quite sort of neatly packaged so you had that sort of equilibrium piece, balance piece, you had the prone extension piece, the supine flexion piece, and you had that bilateral coordination.
Participant 2 elaborates on this subject by referring to the cortical structures that are involved in emotion and how the pathways aforementioned have a role in regulating impulses, emotion and arousal.

P2: **Looking at the brain stem and the inner brain as that sort of emotional kind of area of the brain that when its triggered you have all those sort of emotional reactions and outbursts and if you look at the cortex which surrounds the midbrain or the brain stem is what sort of dampens and controls if you want to use that word.** Controls those impulses and emotional reactions and there's different pathways that trigger each one and so as (name removed) was saying, that SI piece around proprioception especially, can have those kind of pathways that trigger the cortex and in theory dampens the limbic system and midbrain, and brainstem and kind of has that calming and dampening effect.

5.8.14.2 **The Four Elements**

The participants in designing the Movement Matters programme, based the activities on the two developmental postures and two developmental functions.

P1: **So the four quadrants are, we are looking at what we consider as the two developmental postures, and that would be supine flexion being the first when you pull yourself into flexion ok. The second would be prone extension so those are your basic developmental postures, they tell you a great deal about how a person is experiencing their body...** built from them then, we have postural control...that leads directly off your proprioception and vestibular systems, and the fourth quadrant is bilateral coordination, so it’s how you experience movement, how you experience body mapping. So those are the four quadrants on which we’ve pinned the whole of the programme on.

5.8.14.3 **Bottom-up Approach**

The new programme is viewed as a bottom up approach to addressing student challenges as opposed to top down like the Alert Program. The participants recognise the potential for altering the functioning of the neurological system but also the amount and duration of sensory input required to aim for this.

P1: **This is not a top down, this is a bottom up approach, so if were looking at maybe actually changing the plasticity of a brain, then we know if you’re going to be going to do that, you’re going to need to be giving regular input over a period of time.**
5.8.14.4 Matrix Model

The participants reference the Matrix Model (Richter and Oetter, 1990) at length which relates to the co-regulation between mother and child when a child is learning and exploring their world. The participants see the model’s relevance in the Behaviour for Learning Programme and the relationships developed between teachers and students. The participants see many of the Level 3 students ‘stuck’ in the mother-child space where they are not able to function independently in the school environment.

P1: These students don't function in a big classroom...we’ve got to come back to that mother-child. So you’ve got womb space, mother-child, kid space and brain power. So actually you’re coming back to that mother-child developmental piece.

The participants theorise that the nature of many of the activities in the programme mirror the mother-child space where the student completes a complex movement moving away from the teacher but always returning to the comfort of their supervision after each effort.

P1: Your activities then are one and two step activities and then each time you go away and come back. So physically you’re like a child, you start together you go away and then you come back together. So you physically do a mother-child as well. You walk over two activities and come back again.

The mother-child space is also conceptualised within the student’s daily school routine.

P2: You see it in the schools that mother child thing, they go off to a class, a lot of the Level 3 (students), go off for two or three classes or even after every class, they need to come back to the door [of the BfL teacher]...have a word for thirty or forty seconds, “how did that one go?” “Fine, on to your next one, where are you going next?”...and they come back a couple of times a day.

Facilitator: It’s back to “mammy” ye.

Participant 2 explains how they conceptualise the prone extension and supine flexion activities of the programme to the postures adopted in the womb which provides the calming, organising feeling.

P2: Those flexion activities and proprioception input that you get from the womb when you were a baby in the womb are calming and are regulating.
Participant 2 conceptualises the Movement Matters Programme as facilitating the students to maintain a state of regulation in order that they can develop their independent learning skills and move away from the ‘mother child space’ to ‘kid space’ and ultimately ‘brain power’.

P2: We’re working between the womb space and the mother child space in order to push them on to that kid space and that brain power...kid space is where you start becoming more independent in your learning and you start doing things for yourself. And then that brain power space is that sort of higher ordering functioning kind of things.

5.8.15 Design Considerations

‘Design Considerations’ was identified as a main theme with three subthemes outlined below and described in detail after.

The participants show their awareness of the context in which they work when designing the sessions of the new programme. The sessions were primarily influenced by environmental considerations and guided by the sensory integration theory as is outlined below.
5.8.15.1 Sensory Input Required

Participants explain that the sessions had to be a certain length and the programme had to run for a minimum duration in order to adhere to the sensory integration theory.

P1: *The literature advises that intensive piece, that regular piece that you need that input if you’re actually going to change because we were looking for the first time ever at maybe making fundamental changes. This is not a top down, this is a bottom up approach, so if were looking at maybe actually changing the plasticity of a brain, then we know if you’re going to be going to do that, you’re going to need to be giving regular input over a period of time.*

5.8.15.2 School Practicalities

The participants were acutely aware of the constraints posed by the post primary school environment.

P2: *You can’t deny it, you know, how the programme was designed was hugely dictated by the setting that we were going to go into to deliver the programme in so you’re going into a post primary school, you want the programme to be able to be delivered in the Behaviour for Learning classroom space. And so when we were designing the sessions, there were forty minute block sessions generally and we needed to fit within that but we knew that would be too long, we knew forty minutes would be too long, it needed to be more compact and intense.*

Participant 1 explains how they envisaged the session structure during the design process.

P1: *It was a simple programme run over a four or five week basis, on a daily basis, how much time could we take up of a teacher? Well we could realistically say, twenty minutes of a forty minute class and they still have ten or fifteen set up time to do some table top work and that was the sort of general idea to begin with.*

5.8.15.3 Wider School Context

The participants display their appreciation for the wider context in which they work and respecting the fact that they are practicing in another professions environment.
P2: We knew obviously that it had to fit into the wider school context as well, it couldn’t take up too much time that other teachers were complaining about it. [Because students were missing class time].

The space within the school where the students were doing the programme was also identified as relevant in terms of minimising disruption to the student’s main stream lessons and spreading the culture of movement within the school.

P2: Its come out recently from talking to teachers, is the visible nature of it so if you’re walking past the Behaviour for Learning classroom in the school and you looked in and you could see the students engaging in the programme. That kind of creates a bit of conversation among teachers, teachers want to know more, they want to know who’s doing it, can they look out to see whether that student is actually benefiting from it. So I actually think its important that it was set in that behaviour for learning classroom, that it is visible in the school. That its easily accessible to student so they don’t have to walk to the far end of the school to a PE hall or to another room. So they can just come to the Behaviour for Learning room, get their sensory input that they were seeking or whatever and them return to class in a fairly quick time.
5.8.16 Structure of Sessions

‘Structure of Sessions’ was identified as a main theme with five subthemes outlined below and described in detail after.

The participants speak at length about the structure of the sessions within the programme and it is evident that a lot of time and thought has gone into this structure with a focus on student participation and regulation of arousal levels.

5.8.16.1 Programme Duration

The programme was designed to be completed daily for four weeks but the participants recognised that attendance issues of Level 3 students had to be factored in.

P1: *It’s a 20 session programme. And what we say is that we would like you to finish the 20 sessions in five weeks because the nature of these students is that they don’t attend school every single day and there is going to be a certain level of fall out, so that’s basically a four day attendance [each week] over five weeks.*

The participants also recognise the importance of consistency and power of the teacher-student relationship when choosing the time to start the programme.
P1: We’ve seen the benefits of that consistency. And those benefits when you span it across a holiday period like Christmas or Easter, a lot of the benefits can be dissipated or lost a bit. As you say momentum, rebuilding that relationship again, regretting them going again can be quite challenging so it’s better if we can try and keep it to a five week block without a break.

5.8.16.2 Rationale Behind the Structure

The participants provide detailed reasoning behind structuring the content in a specific way to promote engagement and maintain arousal levels suitable to the classroom setting.

P1: We actually start in prone extension even though supine flexion would come first (developmentally), but supine flexion is a difficult posture and the movements are very difficult, they’re very demanding, they’re against gravity, so we actually start in prone extension because that’s a posture that they like, they usually do it over the gym ball, it’s a very engaging activity.

P2: And its quite calming and regulating, you can’t get over excited doing it because there quite a high level of concentration and you’re weight bearing through your shoulders and your elbows and your wrists because you’re over a ball in a prone extension position doing an activity that requires attention and concentration so it’s quite calming and grounding.

Participant 1 describes how the rest of a typical session would progress but also eludes to how it can be adapted to suit the individual student’s needs. This adaptability is evidence of the participant’s knowledge of sensory integration theory and clinical skills.

P1: We start with the prone extension, then we usually go to supine flexion at that stage. Then we move to bilateral coordination and we finish with postural control. Now we may change those around depending on our student because sometimes the postural control can be a little bit alerting because it’s usually a balance activity so that can be quite exciting for some of them. So might after a while realise that they need to finish off the session with something that’s very heavy work for them and dampens down that system. And so you may move some of the quadrants around and I have moved on occasion the supine flexion to the end. So we’ve started in prone extension and we’ve done the two activity based components and then finished with that heavy postural control at the end. So we may move it around depending on our students because it is a Level 3, you can adjust it, it is client centred, it’s around how are they coping with it themselves.
5.8.16.3 **Calmness Scale**

The ‘calmness scale’ also referred to as the ‘cognitive element’ of the programme is identified as an important aspect. Students identify themselves on the scale before and after completing the exercise as participant 1 explains.

P1: *We always start with an integral part of the programme which is the cognitive piece. And there is a self-selecting sheet that the students when they come in have to select one of the smiley faces that go from zero to five. Basically smiley faces on a continuum of…’very hyper’ to ‘very chilled out’. And they have to identify where they see themselves when they first come in the door on that piece. They then reassess themselves when they finish the session on the same continuum ‘very hyper’ to ‘very chilled’ and that’s a really integral part of the programme.*

Both participants reflect in more detail on the importance of this cognitive element in addition to the sensory input aspect. They emphasise it as a method of developing student’s insight into themselves as promoting the concept of being self-efficacious.

P2: *Then that scale then brings in that cognitive piece so they’re now starting to internalise what they’re doing and seeing why am I doing this and what impact is this having on my life in school?*

P1: *It opens up a massive piece around where were you when you started and where are you now and also one of the things that we found, they were not able to identify correctly where they were when they came in. So they may well say, oh I’m really chilled out but they are hyper so it’s an opportunity to investigate that further and “well do you think you are?” and “how would I know that by looking at you?” and actually they get to realise that “actually no I’m not really chilled out I’m actually hyper”. This is hyper and be able to label it and then work out what is chilled out. So that is a massive learning piece to recognise in myself what am I. if you don’t know where you are on that spectrum, how are you ever going to be able to change yourself to where you need to be when you don’t even know where are to start with. So that’s a huge cognitive piece and very often that is the case when they start.*

5.8.16.4 **Cool Down**

The cool down component of every session is identified as a core element of each session also. This serves as a self-regulatory process and adds to the routine of each session.
P2: Pulse taking forms part of that cool down, so that sort of grounds them again in case that they have come quite excited in the last few minutes. It’s about quietening down, sitting down on a chair, feet on the floor, grounding themselves again, finding their pulse, so they have to slow down their breathing so they can hear their pulse and there’s a thirty second window of dead silence when they can hear their pulse and feel it and again it’s that nice sort of routine piece as well. So every session is the same, there’s a warm up and a cool down and a reflection so every session is the same.

5.8.16.5 Use of Time

The data indicates the structure developed by the participants can take varying amounts of time in practice depending on the teacher and students experience of the programme. The extra time that is sometimes available is used in different ways by different teachers.

P1: Its twenty minutes when they have got used to the structure. It may take the full 40 minutes for the first few session while they get used to the routine and structure. We know from experience that once they get into the routine it can take twenty minutes no problem at all. So there is a period of time for reflection, to come up to the table top, do a piece of work, whatever it might be. There’s a ten minute, fifteen minute window then that teachers may use for something else. And different teachers choose different activities. It might be relaxation, I have one teacher who finds that she needs to do a lie down on the floor relaxation piece with them. It might be a reflection piece, it might be an opportunity to discuss their goals and their targets, that’s a very good time.
5.8.17 In-School Support

‘In-School Support’ was identified as a main theme with five subthemes outlined below and described in detail after.

The participants emphasise the importance of the in-school support model as part of the Movement Matters intervention to support inter-professional practice.

5.8.17.1 Teacher Skills

The participants recognise the skills they have developed are not common to all professionals and that the teachers appreciate the involvement of the occupational therapists once a week.

P2: Some teachers will not have a sporting background and would not be as comfortable doing movement. So a lot of them will just be needed to be reminded about a progression ye know, be it in the ladders the bilateral piece or they might not be completely clear what the activity is and they might ask you to lead this particular one, or could you tell me what this particular one is before the session starts, so there’s that aspect to it as well.
5.8.17.2 Inter-Professional Practice

The participants consider it a matter of respect to their teaching colleagues who have committed to such a time consuming programme.

P1: It is a huge investment of time. I mean the teachers have invested time in this so it’s actually respectful, to come along and support them because that’s difficult to do in a school. And they have to justify that so in a way, you coming every week says this is worthwhile, this is a commitment, we recognise the commitment, let’s do it together.

Participant 2 emphasises the importance of the weekly visits for the students also, as providing momentum is vital in such an intensive intervention.

P2: I think that sort of just reflects a point about the importance of momentum and all that kind of stuff in all these programmes that we do…you are this consistent figure every week that students rely on you being there and they like having the visitor every week and that kind of gives them an extra bit of energy and all the rest. And if you miss a week, or the same if a teacher misses a week, that momentum breaks up, that momentum is very important when it comes to this kind of intervention.

5.8.17.3 Client Centred Practice

Also having the frequent involvement of the occupational therapists in the sessions is identified as ‘crucial’. This allows the programme to be adapted to suit individual’s sensory systems to ensure that a suitable arousal state is achieved at the conclusion of each session.

P2: Without the support of the OT or the other Movement Matters team member, to make those little tweaks and to look at the child from an OT perspective and a sensory perspective, that child might end up going back to class quite highly aroused everyday which is not what you want.

P1: It’s absolutely crucial because then teacher, and as you say team member, can get together and say, “What did we see today? What were the behaviours that we saw? What happened during the week?” And you can really look at the programme saying “well we need a bit more of this, a bit less of that” and it definitely makes a huge difference.
5.8.17.4 Re-thinking Student Selection

The participants demonstrate their reflective thinking when discussing the potential of the programme for students with profiles outside of those the programme was originally designed for.

P2: We kind of prescribed it for those Level 3 kids, keep it to Level 3 those sensory seekers, those guys that the Alert wasn’t really giving enough sensory input to calm, but now I’m thinking this could really do huge things for the students who are introverted, who don’t have confidence, who are quiet, those “Wallpaper Kids” who would make them come out of themselves a little bit.

Participant 1 shares her experience of working with a student with Oppositional Defiance Disorder (ODD). She felt the programme suited him due to the collaborative nature of the relationship between teacher and student doing the exercises as opposed to the more traditional didactic style of teaching of ‘you do as I say.’ This provided teacher and student with an opportunity to work together and to learn essential skills of co-occupation and co-operation.

P1: I had one lad who was very oppositional and it worked incredibly well for him because it wasn’t an ‘I tell you what to do’, it’s you know what, were doing it this way, it’s a programme and I'll have a go and you can have a go.

5.8.17.5 Therapist Reflective Practice

Participant 2 outlines the methods they use to reflect on what they are observing in practice and how they share this learning with each other from different settings.

P2: Every time we visit a school, there’s a reflection thing that we do…you just document whatever feedback the teachers have since you saw them last and then you write your own clinical reflections and judgements on what happens and that’s kept after every session. We have weekly discussions as well because it’s important that [name of P1 removed] knows what’s going on in my schools and I know what’s going on in her schools. You know all teachers are different because all teachers have differ personalities and different abilities and different skill sets and the same with the students.
5.8.18 Programme Adaptations

‘Programme Adaptations’ was identified as a main theme with three subthemes outlined below and described in detail after.

The data indicates that the participants are satisfied with the general design of the programme and minor alterations have been made after the first trial to reflect student preferences, practice experience and updates within the sensory integration literature.

P1: *What is interesting is fundamentally, we’ve stuck to the core principles, and whilst we’ve tweaked it here and changed the odd activity, and renamed some of them, we actually hit quite close to the mark straight away, so that just shows you that we have drawn from the knowledge [in the literature].*

5.8.18.1 Terminology

P2: *All the sections are still the same except we changed ‘equilibrium’ to ‘postural control’ reflecting the up to date literature and terminology from the SI literature.*
5.8.18.2 Activities

P1: We made some very minor activity changes that the lads were less comfortable with. There was an activity where we got them to take their shoes off, for instance, and they had to pick up something with their feet. Well we found out very quickly that they didn’t like that. No they didn’t want to take their shoes off.

5.8.18.3 Calmness Scale

Participants refer to altering the terminology used in the calmness scale to encourage students to reflect on their arousal level and not their emotions.

P1: We changed again some of the wording in the self-selecting piece. We called them hyper at one stage.

P1: So we took out ‘stressed out’ of it and called it ‘hyper’ instead. We used to say it was chilled out to ‘stressed’.

P2: It was because they were saying ‘stressed’ was confusing things with emotion and we wanted to stay away from emotions.
5.8.19 Influence of Other Disciplines

‘Influence of Other Disciplines’ was identified as a main theme with three subthemes outlined below and described in detail after.

Analysing the data suggests that the participants are committed to continuing their professional development through formal methods but are also cognisant of the knowledge and skill base that lies within the teaching professionals with whom they practice.

P2: You’re also trying to as well draw from other disciplines and not stick solely to the OT discipline and so looking at what’s going on in other areas. Because it’s important to look outside our own discipline as well and see what’s being said. Because there’s no point all these disciplines working in isolation. Nothing fits neatly into a box because no problem is a neat problem, and no solution is a quick fix or neat solution itself.

5.8.19.1 Need for More MDT Work

The data reflects a respect for the contribution many professions can make within this practice context but not enough interdisciplinary work occurs at present.

P2: I think a lot of people have a huge amount to bring to the table in these areas. Teachers have so much experience to bring. I think we have experience in group facilitation and task analysis. I think psychologists can bring a lot to the table. But I don’t think there’s enough
communication between disciplines, especially in this area of work. You know you work in a hospital or work in a clinic and you probably work in interdisciplinary and multidisciplinary teams and communicate regularly, whereas in this setting there wouldn’t be as much of that going on. You know we collaborate with our speech and language therapist colleagues on the team but we wouldn’t see them regularly.

5.8.19.2 Neurofeedback

Participant 2 expresses a curiosity in the literature on trauma and neurofeedback as a treatment and questions its relevance to the NBSS practice context. This reflects the participant’s eagerness to read widely and draw on as much expertise as possible.

P2: There’s one area that I find quite interesting and that’s the whole trauma area because a lot of the students in the schools come from very difficult backgrounds where parents could have died or be in prison, violence at home, domestic violence that kind of thing. So there’s a lot of evidence out there and its emerging as well, while they mightn’t be in the SI language, you can really make comparisons with the Movement Matters and the things are being talked about in the medical literature like neuro-feedback. And I really want to look into that more and see if that is something that Movement Matters is ticking as well.

5.8.19.3 Interdisciplinary Learning from Research

The data suggests that the manner in which the NBSS conducted their research on the Movement Matters Programme served as an opportunity for interdisciplinary learning and developing ideas. The NBSS researcher invited the Behaviour for Learning teacher and the occupational therapist to participate in an interview in the school where the programme was completed. The NBSS researcher asked the teacher and occupational therapist pre-prepared questions and encouraged them to discuss and reflect on their experiences of using the programme and of working together.

P1: Every school has been contacted and asked and every teacher has been asked if they want to be involved in giving an interview. They’re given the opportunity to talk about how they found the programme and actually they’ve turned into brainstorming types of group things which I’ve found hugely beneficial as well. And the team member who has been supporting them is part of that interview. Were all interviewed together and that’s been hugely beneficial.
5.8.20 Learning to Date

‘Learning to Date’ was identified as a main theme with six subthemes outlined below and described in detail after. This learning refers to the emergence of the Movement Matters Programme as a tool for creating unique learning opportunities for students.

It appears that the semi structured interview process served as a professional reflection session with the two participants discussing and working through ideas and concepts that hadn’t been discussed before. The depth and breadth of the subjects discussed suggests an advanced level of clinical reasoning with the participants applying field based learning to theory and research to make sense of the student’s experience in their school context.

5.8.20.1 Environment

Participants refer to the importance of the environment in which the Movement Matters Programme takes place, keeping it within the Behaviour for Learning room if possible and avoid using spaces that are too far removed from the traditional learning spaces.

P1: Some schools found that they didn’t want to follow that, they wanted to take it to a specific room and a couple of schools that I worked with did that originally. But what is interesting now is that they’ve returned it now to the Behaviour for Learning classroom. Its back down to why are we doing this? We’re doing this because we actually want to make
learning easier and you’re bringing it back in, you’re taking it back. So if you’re taking it to a PE hall it changes the environment and changes.

P2: The context... So one or two schools would have done it in a separate room and there’s is kind of validity to that in some cases. Because in one school the Behaviour for Learning classroom is really busy all day long and serves a very important role in that sense. I’ve been in this particular teacher’s room where the students use it as a base, you know that ‘check and connect’ piece. Quite a lot of students coming in all day long, like in the middle of classes, in-between classes, and they just felt that that would be disrupting the flow of the session if they’re doing it. So maybe they have to look and address that because we can’t have that. But at the same time, there is huge value in the students being able to go to a classroom to check with their teacher if they’ve had an incident, a small incident that could be diffused before it develops into a big incident and that teacher has said that that is incredibly important that those students can come to him for two or three minutes. It could be to get a pen, could be just to report to him something that happened in the class. That they were a bit annoyed about or the teacher said something to them. And he can diffuse them and set them on their way again. But in that case they were using a prefab out the back of the school [for Movement Matters] and it just sets a different context. So they’re going to look at it again, maybe just a room very close to the Behaviour for Learning room or within the same building quite close to where the busy areas are would be good. At the end of the day, there are some Behaviour for Learning classrooms that are just too small and that’s just the end of the story so they’re going to have to look somewhere else. But if they could keep it within the school building and not be going off outside into a prefab or outside to a separate area that feels very removed from the school building, I feel that would be best, if at all possible.

Participant 2 emphasises the influence that environment can have on participation.

P2: It comes all the way back down to again the different contexts in which the student and teacher work. Obviously you have two students, one teacher in a different room, in a room that feels different to a classroom that isn’t set up the same as a classroom. It’s a different context, so if you were to go to an empty classroom or another room that isn’t the BfL it changes the atmosphere and the context. So there’s a lot of things flying around in the air that create the learning space which, is what it is.
5.8.20.2 Teacher-Student Collaboration

The data indicates that the Movement Matters Programme acted as a catalyst for changing the nature of the relationship between the teacher and student in some cases.

P1: *One of the things that came out that was really interesting, and what she liked most about the programme is that it shifted the type of way she was teaching instead of all the time, “I am the teacher and you are the student and I’m going to tell you how to do it and you’re going to do it.” It became that collaborative piece where I’m going to have a go. And she said she was spectacularly weak at some of the movements. And the fact that she couldn’t do them, and she had to come around and do them a second time and they had to show her how to do them, she said that was massive, she felt that was massive that they got to see that she wasn’t all knowing, all brilliant, and quite the opposite because she was able to say. “Look I’m not so good at this, I’m quite good at this.”*

This collaborative relationship appeared to support students in learning about their own strengths.

P1: *They accepted their own failings a little bit easier. They said “well oh I’m not so good at this either but I am good at this”. And she said luckily the two students she picked, one was quite good at one thing and the other was better at another thing. And they were able to let go and accept their own weaknesses and say it’s ok to be weak at this because you know I’m really good at that.*

The interview facilitator suggests that collaboration is the essence of occupational therapy but not teaching to which the participants disagreed. The programme is proposed as a tool for building relationships with students who are reluctant to engage.

P1: *I think teachers would say the essence of teaching is the relationship you form with the student. I think they would back the same thing. They might do it a different way, but they’re looking for the same thing, they’re building that relationship… So you can sell it to the teachers that this is an opportunity when you haven’t had a buy in, when you haven’t had…this might be your way in. it affords you another way of building a relationship.*

Participant 2 suggests that the overall culture within teaching does not promote collaborative relationships despite teachers’ aspirations.
P2: I think it’s really interesting what you said there about that because teachers would advocate that they are all about relationships, but the current system of teaching doesn’t really support that vision. So you know one person standing in front of thirty people sat behind desks, doesn’t really give you the opportunity to develop those relationships.

5.8.20.3 Cycle of Failure

Participants refer to students stuck in a ‘cycle of failure’ due to their inability to access the curriculum in a successful way. They theorise that the Movement Matters Programme offers these students the opportunity to participate daily in a challenging occupation pitched at the appropriate skill level that promotes mastery experience. Completing the programme is also considered significant due to the tenancy of this student group to drop out of things before finishing due to their perceived weakness.

P2: That ‘feel good feeling’ as you’ve said, the enjoyment of doing it once a day and again back to that thing. A lot of the students aren’t academically strong at all so there’s a bit of a cycle of failure in the classroom, struggling to access the curriculum and this might be the one thing in school that they’re actually good at.

P1: And another thing, a lot of the teachers would say about the programme is that the students finish the programme and so many of these kids never finish anything. They start everything but never finish it. Their ability to stick with something is so weak so they never really get that mastery feeling. That’s linking into that again. It’s to say you know what I started at session one and finished at session twenty, because so many of them drop out of things.

5.8.20.4 Sustainability

Participants refer to the challenges posed by the student’s reported reliance on the programme following completing it. Teachers recognise the benefit the programme appears to have had on the students, but they must ensure all students in the Behaviour for Learning Programme receive the supports and resources needed.

P2: One of the biggest things that’s coming out and what the students and teacher are saying, it works and we like it. Now were not sure why it works but when the students are doing it, they’re enjoying it and they seem to be getting on well in school and the other teachers are confirming that as well. Now the nature of it is, you run it for four weeks every day. Then it could be Christmas or Easter or another holiday break and then they come
back to school and two other students come in and do it and essentially those students are dropped and they don’t get the programme generally speaking. And what they find is, a couple weeks/months down the line, that student starts reverting back, not in all cases but they start going back to their old ways. So I think our big challenge for next September is designing that follow up model. And I think every school is going to be a little bit different, every school has different resources.

The pressure of equipping students with ‘transferable skills’ to use in the classroom is highlighted as a frustration from an occupational therapy perspective. Participant 1 emphasises the importance of students receiving required sensory input, experiencing co-regulation and developing cognitive insight and self-awareness.

P1: I think there’s going to be a couple of different models. And there is an obsession with transferable skills which is completely understandable. And that’s the challenging part of this programme that while the transferable skills isn’t the primary part of this. The primary part off this is delivering that input to a sensory system that needs it at that point in time. And its fundamental changes we are looking for, be them at a co-regulation piece, a cognitive piece but also at this fundamental neurological piece.

The importance of the co-regulation between student and teacher is highlighted as important in maintaining students’ positive behaviour following completion of the programme.

P2: You just mentioned that co-regulation piece. And I think there’s an element of, some students just need to be not dropped. Even if it was just once a week. Once a week isn’t going to give them the neurological input they need for the week, but if it’s just once a week, that’s giving them the co-regulation piece and relationship piece with the teacher that they don’t feel that they’ve been forgotten about. Now they’re probably in the room doing other things anyway but because they love the programme so much anyway, just to have it once a week would make them feel that they’re still part of it.

5.8.20.5 Alert Programme

The ‘Alert Programme’ is identified as an important in building students sense of self and insight into their own arousal levels prior to doing the Movement Matters Programme. It is however not considered compulsory.
P2: A lot of students who are doing Movement Matters may have done the Alert Programme before. And that would have given them their first introduction to ‘where am I’ in relation to engine running high, running low, running just right. So if they have that cognitive piece around the Alert Program, it’s very easy to explain what Movement Matters is, and why they might be doing it. So they might have learned about how sensory input changes where your engine is especially around that movement and some of them might be doing some chair push ups in class to calm and regulate themselves. So if they have that background you don’t have to do so much of that introduction piece and insight building because they have the language and insight already.

P1: I think going forward we would be advising teaches to see, run the Alert first. It won’t exclude the students who really need it at that point in time. The ones who are completely off the wall at that point in time and they need that one to one, that intervention. It shouldn’t stand in the way, it shouldn’t stop a student from being involved in the programme if they’re in need of it. However if it’s possible to go after the Alert, that’s probably the route we would advise, simply because you’re really bringing in that cognitive piece, they really know why they’re doing it and that really useful but it shouldn’t block somebody.

5.8.20.6 Transition in OT’s Thinking

The participants discuss how they have developed their reasoning about the programme’s use and the profile of student that could potentially benefit from participating in it.

P2: I know we started off the project with our self-regulation, self-modulation, SI hats on. This was just all about sensory input and self-regulation. It’s one of the biggest things coming out of it, that students are getting more than just calming and regulating. They’re getting confidence, they’re getting mastery, they’re getting all of those psychological constructs out of it.

C: But back down to your point. It’s so much more than a programme for just self-regulation, so I would be using it and saying it in our training in the future, think of your ‘oppositional’, think of the ones where you can’t get a buy-in with anything else. Think of the ones that down tools and disengage, this might be your opening, this might open the door for you. Four weeks of this, of working together opens the door for other things or once you get used to the programme...so it’s back down to thinking around it, there’s other things it’s very very useful for.
5.8.21 Summary Interpretation

The second semi structured group interview builds on the data from the first interview with more of a focus on the rationale for the content of the sessions, the support process and the learning to date from the participant’s practice experience. The following is a summary of my interpretations of the data from the second group interview.

- The presence of the SAQ programme in schools prior to the design of Movement Matters was significant as it introduced the value of movement as part of the process for promoting behaviour for learning. However, due to its roots in physical education and sports performance specifically, and the absence of in-school support for teachers, it wasn’t serving the needs of Level 3 students adequately.

- The participant’s knowledge of sensory integration theory strongly influenced the session content of Movement Matters. The programme is designed to tackle modulation difficulties from a bottom up approach as opposed to the ‘Alert Programme’ which is primarily top down.

- In designing the programme, participants were challenged to ensure that students were receiving adequate sensory input within the environment of the ‘Behaviour for Learning’ classroom without impacting the work of other students and teachers in the wider school environment.

- In structuring the session plans, the participants demonstrated a deep understanding of the theory they were applying but also the context of the practice setting. Their practice experience informed them of the importance of timing, activity momentum and developing student insight.

- The weekly in-school support facilitates inter-professional practice and enables the two professions to provide a person centred intervention. This support structure and the professional relationship established between the two professionals is considered to play a major part of the reported success of the programme as teachers feel supported and confident in their practice.

- The initial design of the programme in trail one was found to be quite suitable for the context and clients with only minor alterations to reflect student preferences, practice experience and updates from the sensory integration literature.

- The participants are committed to continuing their professional development through formal methods while being cognisant of the knowledge and skill base that lies within the other professionals with whom they work.
There is evidence of significant learning from the participant's experience with the programme to date. They apply field based learning to theory and research to make sense of the student experience in their school context.

**Clinical Reasoning**

- There is much procedural and conditional reasoning evident in the second semi-structured group interview as the sensory integration theory and the physical and cultural environment of the schools influence the content of the Movement Matters session plans. There is also interactive reasoning emerging from the descriptions of the strong inter-professional collaboration that is developing. Finally, the participants’ narrative reasoning is beginning to show as they report using sensory integration theory and their practice knowledge to begin to make sense of the student experience with the programme.
5.8.22 Third Semi Structured Interview

Context
The third semi structured group interview took place in December 2015, one year after the first. The NBSS had decided not to train further teachers for the 2015/2016 academic year but rather assess how the programme was being used in the schools that had received the resource now that the trial period was over and the teachers were not receiving weekly support from the occupational therapy team. The participants had spent the autumn/winter term visiting schools and observing how the programme was being used or not used for some schools as long as two years after initial training and intensive support.

Themes
The third semi structured group interview asked more questions about the review process and structural changes to the programme and how teachers who facilitate the programme are supported. Eight main themes were identified as outlined in the figure overleaf. Each of these themes have subthemes which are described in the following pages.
Figure 40. Overview of themes from the Third Semi-Structured Group Interview
5.8.23 The Three Elements

‘The Three Elements’ was identified as a main theme with four subthemes outlined below and described in detail after.

It is evident from the emergence of this theme that the participant’s reasoning has evolved since they first designed and trialled the programme. It appears the participants constantly critique the use of the programme to determine where it fits in the context of the setting. Their understanding of the multiple aspects that benefit the students has developed over time.

5.8.23.1 Sensorimotor Element

The data indicates that the sensorimotor element is still considered by the participants as the core of the programme.

P1: *We’re saying what we’re doing is fundamentally looking at that sensory system foundation but what we’re saying is, in order to make it so, what we want to do is deliver an intense sort of bombardment of those sensory systems in order to calm and organise ok.*
5.8.23.2 Emergence of Other Elements

Participants report that they observed the programme developing overtime from a self-regulation programme with a strong sensorimotor element to one that appear to have strong cognitive and co-regulation elements.

P1: We could see that although we started off initially with this being very much a sensory motor based integration or intervention, where by you’d be looking for those basic structures, those fundamental, foundational levels of proprioception and vestibular to sort of calm and…

Facilitator: Organise?

P1: Organise ye.

P2: A regulation programme.

P1: A regulation programme ye, we could actually see that there were other things happening as well and whilst we thought that they might be there, it was only through experience that we managed to capture those. So we began to bring in very much more that co-regulation piece. So we had a sensory motor piece and that co-regulation piece is almost as big. So with some of our participants, that was the primary kind of benefit of the programme that was the co-regulation. And also we could see how that cognitive piece was also incredibly important because if the cognitive piece was missing, the participants weren’t getting the same value out of the experience of doing the programme. So if the teachers were missing that element around ‘how are you feeling now?’; ‘where’s your calmness level?’; if they were missing out on that sort of self-reflective piece, “this is where I am now on that calmness scale”; then we found that the effects were not as beneficial. So therefore, that led us to believe that not only is it sensory motor, there’s also a big cognitive behavioural piece in it and a big co-regulation piece in it.

P2: So you can already see it that we’ve moved away from this very tight has to be only Level 3 students who are presenting with behaviours that are you know constantly moving, sensory seeking behaviours. We’ve moved away from that now and you can really sort of see how in the early days that’s what the programme was designed for, the sensory seekers who needs sensory input, now it’s really moved on from that.
5.8.23.3 Co-Regulation Element

The participants demonstrate their understanding of co-regulation and how it is evident from their experience of observing Movement Matters in schools.

P2: It’s that kind of mutuality between the student and the teacher that occur when you’re, you know when you’re seeing someone every single day for a specific reason over the course of a term. You know four or five weeks, you know, you build a natural relationship there and then. The nature of what you’re doing then sort of supports that, so the work that they’re doing is obviously designed to be enjoyable and fun. And it’s very much a case of ‘I do, you do’, as in were both in this together. It’s not “I’m the expert and you’re the student or you’re the novice, I’m telling you what to do here.” It’s a bit of a voyage of discovery for us both because the teacher wouldn’t necessarily be an expert in movement or in this programme.

P1: If you’re touching base on a daily basis, you’re really starting to anticipate the ebb and flow of what this person is really like. And you begin to pick up if they’re really not having a good day and the teacher is able to anticipate well, wait a second, this is not the normal, I wonder what’s been going on? I wonder how I can bring this person around. Whereas you wouldn’t be, you would not have the opportunity to know each other and that goes both ways…

P2: …it’s that two way street…both people being signed up for you know I’ve a responsibility and you’ve an responsibility to keep this thing going. So you know if you’re having a bad day I kind of step in, step up and make sure the thing keeps going and visa versa.

5.8.23.4 Ongoing Student Support

The participants propose that some students, having finished the formal programme, may benefit from continued support by engaging in some elements of the programme.

P1: My experience of that is that it’s done on a case by case, student by student basis and it’s up to, then it’s part of that problem solving process that you do with the teacher. So you say ok what would be the best fit for this student going forward? Would it be, it might be that in fact they continue to come to the BfL classroom three times a week and they continue with some of the parts of it. And they link it very closely so they might just, you know, there might be elements of the programme that they particularly engage well with
or maybe that they found hard that they’re going to continue with it. And then that becomes part of their learning. You know, kind of build into their learning structures going forward. Particularly the first term because the first term they've got another two terms to go so particularly the student who have been involved this time, they've plenty of opportunities in the school year to keep laying it down, gives the teacher an opportunity to keep that cognitive piece going. That co-regulation stays in and then touching in again with the sensorimotor.
5.8.24 Student Behaviour Plans

‘Student Behaviour Plans’ was identified as a main theme with three subthemes outlined below and described in detail after. Student Behaviour Plans are a core part of the Behaviour for Learning Programme for students receiving Level 3 support. The teacher works with identified students, individually or in groups on Behaviour for Learning programmes that are designed to meet their social and emotional, positive health and wellbeing, behavioural and academic needs, so they can achieve and succeed in school.

The ‘Student Behaviour Plan’ (SBP) emerges from the data as a key part of the work with Level 3 students in the Behaviour for Learning classroom.

5.8.24.1 Central to Movement Matters

The three elements of the programme outlined previously are identified as having the potential to inform the SBP and consequently impact the student and his/her experience of school.

P2: *One was sensorimotor, one was co-regulation and the third one was the cognitive element. And what we were saying is that these are the three elements or components or aspects that Movement Matters is offering that can influence that Student Behaviour Plan and can affect what goes on, for eh, in terms of and can help you with your planning in the*
**Student Behaviour Plan.** Also you can tie up the Movement Matters Programme with other things on that plan, and other things in that students life and school.

The data reflects the importance in ensuring the Movement Matters Programme was more than just an enjoyable programme for students and teachers and linked to the main purpose of learning in school.

P2: *It's not just this sensorimotor programme that they go in, like a gym session, and they go out the door and there's no link up. That they can use it to link it to their learning in the Alert Program, Friends for Life [another programme]. It allows them to do some literacy/numeracy at the end. You know tie in spelling and maths things into some of the Movement Matters activities and again tie in that 'I can do' piece into 'I can do in school', that transfer of ye know getting confidence in the programme to getting confidence in school.*

5.8.24.2 **Tool for Reflective Practice**

The participants consider the Student Behaviour Plans as tools for teachers to develop their reflective practice and professional reasoning skills.

P2: *I think if you look at it like a professional reasoning tool for teachers as well that they can track their thought processes and track where they're coming from.*

The data indicates that the plans are not always used as effectively as possible in the participant’s view.

P1: *Teachers get together a massive amount of information, background information on these students. Then they set out seeing, well, where’s the best place to start. And then they start on that intervention, and then the Behaviour Plans get forgotten and then they go off in different places without referring back.*

It emerges that the process of reviewing the SBP has become a focus for improvement as the potential the document has to contribute to the BfL teachers’ professional reasoning is recognised.

P1: *A lot of them found linking it [Movement Matters] to their behaviour plans quite difficult. So that's been our huge emphasis this year, is to really look at those behaviour plans and say how do we join this up. Teachers need the support and we all need to problem solve*
how to do that. There’s a big push this year to make these behaviour plans a live, living document, not just at the end of every year “oh I must fill this all out”, what did we do, why did we do? But actually be something that you keep referring to, that you keep coming back to, because again, if you’re going to, if you’re going to make changes and you’re going to see changes you need to keep going back to where you’ve come from.

5.8.24.3 Redesign/Updates

The participants report that the format of the SBP is under review and has changed to reflect what is happening in practice.

P2: It’s a living document, that sort of a term, it is always being changed and what’s very useful now is that the RDOs that have joined the team in the last year, used to be Behaviour for Learning Teachers themselves. So they’re bringing this huge range of expertise themselves of actually having been in that role of the teacher using these documents and now they’re on the other side of being able to affect change and update them.
5.8.25 Skill Development

‘Skill Development’ was identified as a main theme with five subthemes outlined below and described in detail after.

This theme explores skill development and the Movement Matters programme. The occupational therapy programmes are considered as ‘tools’ or ‘ mediums’ for students to develop and practice the skills required to engage in school occupations.

5.8.25.1 Movement Matters as a Medium

The participants explain the reasoning behind not naming specific skills that the Movement Matters Programme aims to develop. They reason that opportunities are offered for a wide range of skill learning.

P1: If you name the skills, you’re perhaps pigeon holing the programme…we’re saying what we’re doing is fundamentally looking at that sensory system foundation. What we’re saying is in order to make it so, what we want to do is deliver an intense sort of bombardment of those sensory systems in order to calm and organise ok. But in the meantime, we also have to make it relevant, we also have to make it school appropriate so therefore we were bringing in the other pieces as well. But the programme is not about a skill or about ‘I can do’, those are sort of healthy by-products if you like.
Facilitator: The child’s having a good experience but the extra piece is that you can start seeing the learning opportunities as you were saying earlier, the learning opportunities for other things to emerge like, the social skills, the taking turns, the stamina, the mastery experience and all that to be flagged up to teachers who are more aware of those as learning outcomes.

The participants have developed an understanding of the programme as a medium for developing skills and/or relationships. Participant 2 reflects on the programme’s potential as a medium to develop teacher-student co-regulation.

P2: I kind of noticed that there’s another role for the programme in that co-regulation piece. Talking about a student who is just completely not engaging in anything and even emotionally completely blank whatsoever. She has a very traumatic childhood, her father is not around I can’t remember is it, I think her father is actually dead. Her mother has no emotional regulation. There’d be you know certainly attachment issues there, the mother has her own personal issues and that kind of stuff. And she’s [the BfL teacher] just kind of trying to find a way in to communicate with this girl. She would have tried the standard social and emotional interventions that are out there. Maybe some of the Friends for Life pieces around trying to get her to label emotions and to kind of talk about her feelings and label this that and the other. And there’s just nothing going on there. Her expression is completely flat, she’s just not verbalising anything and em we just started talking about how Movement Matters could be a way of just getting this student to engage in something that could lead to an opening. You know.

Facilitator: ye it’s a medium

P2: It might take a week of her engaging in the programme before she starts opening up. And we know the connection between certain sensory inputs around vestibular and oral motor and speech and all that kind of stuff. But just back again to that sort of co-regulation piece of being together in someone else’s company for a period of time that’s non-confrontational, non-threatening.

Facilitator: but what you’re saying is experienced teachers with consultation from you guys, they can actually start to see it as a medium. It’s like an occupationally appropriate medium, for other students, not necessarily for the sensory seeking students.

P2: Exactly…
Participant 1 explains the potential the programme has for developing students’ skills and in particular students with social emotional and behavioural problems who mostly require an alternative method of learning.

P1: The programme presents the opportunity for the student to practice skills and its obviously those skills are individualised...so it’s really for us to support teachers to name those skills and so the student knows that cognitively, looking at the cognitive behavioural element so actually I’m doing this, I’m doing it through my body when I’m doing movement but it’s still a skill, and it’s really important…and really recognising that those students that have challenging behaviour obviously have, most of them will have very low numeracy and literacy skills and sometimes in order to unlock those, you need to come at behaviour and learning a different way. And they can still have their learning outcomes and their goals but delivering them in a different format. That’s back to that reflective practice again, how can we unlock this student, how can we help them with their engagement or whatever it is, so that in turn it opens up the rest of learning to them and make it easier for them and make it a better place. It might just be a better experience.

5.8.25.2 Transfer of Skills

While the participants previously referred to their frustration with the over emphasis on visible skill transfer into the classroom (second interview), they now report the importance of students gaining insight into how the skills they have been learning and practicing within the Movement Matters sessions can serve them in their mainstream classroom occupations. Apart from receiving adequate sensory stimulation to regulate their neurological systems, the programme offers mastery experience to many students which they can provide them with more confidence when tackling their academic work.

P1: That transfer has to be supported because, sometimes the students certainly struggle with transferring what they are to how that affects behaviour. Some of the teachers get so caught up in the programme itself that they tend to forget and sometimes they do. It’s good to keep bringing it back to as you say, the ‘can do’. You know it’s the same as when you are trying a problem. You don’t always get it the first time but you get it the second time and you’re not meant to get things the first time sometimes. It’s all about practice and how you come through it...and transferring those and they can be quite, they can be quite abstract sometimes linking them together. So it does take a bit of the work to do that em, and we do know that there are gaps there. And we know from the focus groups last year that we held with the students that whilst the students definitely had, you know there were
huge beneficial gains, they knew that they felt better. They didn’t really, a lot of them found linking it to their behaviour plans quite difficult, so that’s been our huge emphasis this year is to really look at those behaviour plans and say how do we join this up? And teachers need the support and we all need to problem solve how to do that.

P1: …and again tie in that ‘I can do’ piece into ‘I can do in school’, that transfer of, ye know, getting confidence in the programme to getting confidence in school.

5.8.25.3 Tool to Build Engagement

The participants provide the example of the programme resulting in a student who historically struggled with attendance and engaging in school occupations built motivation to attend due to his perceived enjoyment and mastery of the programme content.

P1: And that is reflected very much in the attendance certainly with the group that I’m working with now, their attendance over the first couple of weeks was quite sporadic. But once they got into the programme, there was actually a sort of eh and kind of eh mutual, were in this together and were going to see this through to the end. We’re in session eleven or twelve or something but once they got into it. One guy who really struggles with attendance, has really stepped up and you see him after the movement session he’ll go to the teacher and say, “what time is our class tomorrow? What time are we on tomorrow?” So he’s already taking responsibility.

P2: That fundamental occupational engagement.

P1: Exactly for the following day. She also looked at him and said he struggles with coming back after lunch, and instead of, she actually puts the session on in the morning because he was missing the afternoon. She needed to get that buy-in first, so there was a kind of a bit of a, she wasn’t using it as a sort of a tool instead which I thought in this case was the right case, she got him in, got him happy in school and he was happier to stay in school as opposed to well you’ve got to come back because this is the only thing you enjoy. So I thought that was respectful.

5.8.25.4 Philosophy on Skill Development

The participants reflected on their experience of implementing programmes in this practice context. They propose that these programmes are not designed to elicit the emergence of
specific skills, but rather individual skills emerge depending on the students that are selected to partake in them.

P2: The way I look at it is that you can’t kind of look at it, like in all the environments we work, you can’t really put clean, clear labels, clean clear definitions on everything we do. So say looking at the Alert Program, you could say that the skill you’re looking to impart there is self-regulation which is an outrageously higher order thing and some kids get there. Most of them don’t. But what they do get out of the Alert Programme are other skills and there’s no point in stating that this programme is for this skill. But in the training, we very much label all those skills. We label the skills you might see, you could see. Some students will definitely achieve self-regulation with the Alert Programme because that might be where they are cognitively, and that might be where they are and all the rest. Other students it’ll be the group work element of it in the Alert Programme, the same with Movement Matters.

Facilitator: So you present the programme as you were saying earlier, there are possibilities for learning skills. It’s to do with the individual and where they’re at and how it’s kind of guided so that the skills then emerge. So they’re learning opportunities.

P2: Ye I think you could probably look at the OT interventions over the years as just sort of mediums for the emergence of different skills that you don’t know will emerge until you see them emerging. The students we work with, we don’t get to have an exhaustive kind of assessment process with them and sort of get to know them inside out and be able to, you know, identify the exact skills that were hoping that were going to, you know, draw out of them. That’s not the way it works. So the programmes that are developed are a medium for different students getting different things.

The participants perceive the Movement Matters Programme as another important tool within a Behaviour for Learning teacher’s skillset for building the skills of students with social emotional and behavioural difficulties, but certainly not the solution to all students’ challenges.

P2: With the information coming back. Ye know we sat there listening to the focus groups and hearing the information coming back that this is something that is hugely relevant and that definitely is worth it and has a place. Again, it’s another piece of the jigsaw, it’s not the be all and end all. You know it sits in there with Alert and Friends for Life and literacy
programmes and other social and emotional things. So the NBSS has decided that yes, this is a runner, this is another one of our core programmes that were going to stick with.

5.8.25.5 Teacher Confidence in Outcomes

The participants are keen for teachers to have confidence in the work that they are doing and to be realistic about what can be achieved for different students.

P2: And also to have the confidence that that is a really good outcome as well that they don’t have to be fretting over a Level 3 student coming to them at the start of term and expecting that they’re going to be acing exams by the end of term and doing really well academically at the end of it, and sitting bolt upright, still in class come the end of the term. But that they have the knowledge and the awareness of the importance of those little skills that are actually huge if you look at the psychological literature.
5.8.26 Scholarship of Practice

‘Scholarship of Practice’ was identified as a main theme with four subthemes outlined below and described in detail after.

This theme reflects a new area of interest for the participants not discussed previously. They proposed a new inter-professional method of knowledge generation involving teachers and occupational therapists, underserved in the literature to date. The data indicates that the NBSS occupational therapists have developed their practice through this unique collaborative approach since commencing working in the setting.

5.8.26.1 Inter-Professional Model

The data highlights the gap in the literature pertaining to an inter-professional model involving the scholarship of practice method for generating knowledge and influencing practice.

P2: It’s an element in the scholarship of practice literature that hasn’t been documented before is that presence of scholarship of practice between disciplines and between
professions…there isn’t that link in scholarship of practice between one discipline coming up with the theory and a separate discipline or profession testing that theory, which is what scholarship of practice is. It’s about academics coming up with, ye know developing theory or presenting theory to practitioners, practitioners taking that theory, using it and telling the academics what they think of it, essentially and how it applies in the practice setting. And there has been publications and research done on that in the OT literature between OT academics and OT practitioners. But what there hasn’t been yet is that trans-professional/transdisciplinary piece around a profession like occupational therapy presenting its theory, its frameworks, its perspectives to another discipline like teaching and for the teachers to reflect, research and feedback to that profession on that theory and those frameworks. And then consequently for that academic profession to then change their thoughts and change their perspectives and come back to the teacher again with a new theory and a new perspective.

5.8.26.2 Method for Developing Practice

The scholarship of practice model is identified by the participants as a method for developing their practice in the setting. This setting is unique in occupational therapy and has little literature documenting practice to date. The participants had to develop their own practice informed evidence.

P2: That’s exactly what happens throughout all this process from the stages of the Alert way back four years ago all the way through to the development of Movement Matters and then the tweaking and researching of Movement Matters. That process is always ongoing, of having an idea from the theory, from the literature, presenting it, adapting it due to teachers’ feedback, due to the professional reasoning of the teachers and then going back again. So that really has been ongoing for a number of years and hasn’t been documented in the literature so far.

5.8.26.3 Teacher Professional Development

The participants identify teacher open mindedness to and acceptance of other profession’s theory as part of their professional development as a key part of the scholarship of practice approach.

P2: I think that the best teachers and I think similar to good OTs, good speech and language therapists, good doctors whatever, they take what’s being offered to them from
all these different sources, from the occupational therapists, from the speech and language therapists from the expert teacher, from the international speakers that they hear from the NBSS provide. They take that information and they make it relevant for their setting because every school is a different setting and the cohort of students is different. They take that information and make it relevant to their setting and their work as opposed to just jumping all in…but I think it’s very important to pull the relevant pieces from the different professional offerings.

5.8.26.4 Generating New Knowledge

The data indicates that the teacher cluster meetings facilitated the generation of new practice knowledge. This knowledge informed the occupational therapists about the theory that was being applied in the teaching practice context and supported other teachers who were able to reflect on their own practice through hearing of their colleagues’ experiences.

P2: You know you really need to give people time to use a programme before you decided to bring them back again. So I think the cluster system is a really good and effective way of bringing information and bring minds back together in a room and sharing information. So that’s certainly something that I’d plan on doing next academic year maybe at the start of next year potentially before we run another programme. Because we know that [name of P1 removed], you’ve been kind of supporting existing schools that have been running it again this term and there’s some schools who are doing a huge amount of work with it still like you say [name of BfL teacher removed] is going to be running it again all through this year.

P1: Ye he’s already timetabled it to run all the way through this year.

P2: Ye so the amount of, and he’s a very very capable teacher, so you’d love to pick his brain and find out why does it work for you, why does it work in your school? What are you finding so successful about it?

P1: I think those case studies would be very very valuable.
5.8.27 Collaborative Consultation

‘Collaborative Consultation’ was identified as a main theme with three subthemes outlined below and described in detail after.

This section reflects the participant’s strong emphasis on collaboration with their teaching colleagues as a method of developing each other’s practice and ultimately better serving students who require additional support.

5.8.27.1 Facilitating Reflective Practice

It is evident from the data that participants believe strongly in the relevance of reflective practice in the teaching profession, and that occupational therapy can influence teaching practice with this approach to benefit students. They refer to reframing teacher’s perception of behaviour through observing the ‘Alert Programme’ in practice as the first example of this reflection.

P2: I mean certainly we know from the research anyway, from our published research on the Alert Programme which was the step one of this process that the Alert Programme did change the teachers’ attitudes towards the manifestation of challenging behaviour. They did now see a new element and they found it hugely helpful in their understanding of why
someone would be presenting like this. It wouldn’t be the answer in all cases but it was a really strong piece of the jigsaw for them and in their professional reasoning.

Participant 1 refers to the recent influence of allied health professionals on Behaviour for Learning teacher practice and how the merging of these professional’s perspectives on behaviour with teaching philosophy has resulted in improved reflective practice in teaching.

P1: I definitely think that reflective practice is becoming the expected. And things like the Student Behaviour Plan is drawing people back again and again. So if we’ve done this and this and this is the background, what next, what next? It’s looking for reflective practice. It’s also looking for as you say, obviously we don’t have any change in the curricular content, but we do have that reflective practice does change the way you deliver programmes. And I think there’s been a massive change, even in the few years we’ve been involved and that could be from the speech and language. We’re not just saying the OT lens but just bring that in that transdisciplinary type of approach is definitely bringing in other lenses and saying ok, the end goal is the same. We all need to bring this curriculum to these students but we now also recognise the way, that one way of delivering it may not be the way. So therefore there are other pathways in and we need to look collaboratively, and look at how best to get that curriculum across. And it could be around the self-regulation piece, it could be around the environment, it could be that the environment needs to support the learning, we need to support the person in their personal capacities. They may need movement breaks. It might be around the speech and language, but in general we’re all kind of, coming towards and that only come through reflective practice.

There is also an emphasis on the importance of the collaborative relationship in this process and not just the completion of programmes designed by occupational therapists or other disciplines.

P1: That problem solving, well which piece do you bring, which piece do we bring and how can we all support this? You can’t do that by just saying, I’ve run a programme and therefore this student needs, therefore I’ve done that so he should have that. That’s not how it works.
5.8.27.2 Promotes Individualised Approach

The support from the occupational therapists during Movement Matters is identified as important as part of the problem solving process for individual students resulting in a ‘client focused’ intervention.

P1: One of the reasons why we are anxious that an OT comes and joins that or a second facilitator come and join us, because it is a problem solving exercise. And it’s not just a matter of getting through the activities, the programme. And then if we get through the programme, that means that we’ve done x, y and z and that means the students should be this. Because it’s a matter of, and that’s why it is problem solving. And then we have an opportunity to maybe adapt some of the four quadrants a little bit more. And actually this sort of student could actually do with more of one and slightly less of the other and maybe, well move them around slightly, because in fact if you look at his behaviours, this seems to be lighting him up at a time that we don’t need him lit up. We might need him to do that earlier. So it gives you an opportunity to sort of bring these things through. And that’s why we’re saying, because it’s a Level 3 intervention which is individualised, client led, client focused certainly, maybe not client led but client focused certainly.

5.8.27.3 Teacher Experience and Contribution

The participants refer to the importance of the professional relationship developed with teachers and the effect of this on their practice.

P2: It’s important not to forget the importance of the teacher experience in all of this as well, and how, because you know the relationships we build are so much with the teachers, as well with the students. We get to know the teachers really well. We often see the teachers going on a journey themselves of discovery or of professional development and all that kind of stuff as well, and in their thinking towards the manifestation of behaviour and all those kinds of things. So I don’t think you should forget the importance of the effect of the programmes on the teachers and how that sort of adds to their skill set…

The data reveals that participants consider the teachers’ knowledge of, and relationships with students as the key to success. The occupational therapists support this work by providing the tools in the form of programmes and a professional perspective that can improve engagement and participation.
P2: ... because so many of them are incredibly skilful teachers themselves and practitioners themselves but they mightn’t have the right tools and suddenly they get something that really really suits their style and really sort of knits in with their view of challenging behaviour and their view of the ability of students and it just works so well. It works way better that any of us could do just going into schools, running the Alert [Programme], running Movement Matters.
5.8.28 Structure and Content Changes

‘Structure and Content Changes’ was identified as a main theme with three subthemes outlined below and described in detail after.

This section reflects the participant’s commitment to the constant review and adaptation of the programme, planning for future trainings and trials with the overall concern of improving occupational engagement of students, and supporting the professional development of teachers.

5.8.28.1 On-going Review Process

The data indicates that the participants review their training material and the session plans frequently with an emphasis on bringing up to date theory to practice and also sharing good practice in the form of a case study approach.

P2: ...We have completely reviewed our training notes for the teachers that we do and we’ve also reviewed the entire programme as well and looked at session plans to find out what still relevant, what’s working well, what needs to be tweaked or added to. And it very much comes from that idea of taking the knowledge that’s out there and applying it to the setting...
P1: *It would be nice coming forward in the training to see if we could get a couple of case studies of people who brought things on, just to keep showing us, what is the potential out there, how do you do that…*

5.8.28.2 **Incorporating New Knowledge/Theory**

Bringing emerging theory into practice is evidenced in the participants’ openess to considering new knowledge.

P2: *…One of our colleagues was at a specialist training since the last time we met on bilateral integration. She fed back to us about that and we saw a real place for it as an addition to our bilateral integration piece of the programme. So that’s one real visible, structural thing in the programme that’s been added to and that you can actually really see in the session plans.*

5.8.28.3 **Student Influence on Change: The Calmness scale**

The impact of the now widely used adapted ‘Alert Programme’ is evident in the changes made to the calmness scale. This adaptation was informed by the students themselves who felt that the Alert language communicated their arousal state better than the ‘very hyper’ to ‘very chilled out’ scale.

P2: *We found this year, in a number of schools, that the cognitive scale that we use for the pre session and post session where they rate themselves in terms of their calmness, from ‘very chilled out’ to ‘very hyper’. So there’s five options. ‘Very hyper’, ‘hyper’, ‘ok’, ‘chilled out’, ‘very chilled out’ and what found was in a number of cases, that if the student came in and they were tired so they were sleepy or lethargic or whatever, that they just found that ‘chilled out’ wasn’t the appropriate word for them. They were like, “no I’m not chilled out” but then they would actually use then the Alert language so they would say, “I’m low, I’m running low.” And it’s something that we hadn’t noticed before. But it just shows you I suppose the impact of the Alert and how widespread the Alert is in the schools now and amongst the student population and the language is really important to convey how they’re feeling so we very quickly in the middle of it designed up another scale with the ‘Alert’ language from you know ‘running very low’, ‘running low’, ‘just right’, ‘running high’ and ‘running very high’. Because for some students it’s much easier, clearer way of expressing where they are. That was very interesting because in the other schools over the first year or two, a lot of the students wouldn’t have done the Alert before whereas more and more*
now, we are finding that the students have that Alert piece behind them and then that’s a communication style.

Facilitator: *that works?*

P2: *ye completely.*
5.8.29 PEO Model

The 'PEO Model' was identified as a main theme described in detail below.

The Person-Environment-Occupation model of practice (Law et al, 1996) informs a deep understanding of the practice context how the Level 3 student’s experience of school can be influenced.

The data reveals the challenges faced by the participants in their work due to the complexity of the personal and occupational barriers to the student’s successful participation in school brought about by their disadvantaged social background.

P2: *I think so much of our work goes on in that environmental piece of the PEO. Listen there’s not much we can do about the personal factors that the students are presenting with. You know they’re 13 or 14 years into their life coming from some really challenging environments themselves in which we have no impact, societal environments and all that. The occupations of the school, you know that’s again it’s not the role of OTs to get involved in the content of curriculums yet but maybe in the future.*

The multiple strands of the student’s environment are identified as the best way of influencing these students’ lives with ultimate goal of improving engagement with the curriculum and participation in the multiple occupations of school life. This perspective is consistent with an ecological and bio-psychosocial view of disability.
P2: But what we can maybe influence is maybe the environments that the students are working in. You can certainly see that, and the NBSS as an organisation have changed environments in which the students have. To create the physical environment of a Behaviour for Learning room is huge and is a hugely positive thing and from our perspective to be trying to, to be influencing, to influence the social environment of that relationship between student and teacher and teacher and student. And then maybe, and it’s a very slow long process of eventually, maybe, affecting the cultural environment of schools is a big goal. And it’s probably one of the more accessible things. Listen it’s not easy to affect change like, that but it’s probably your only way in. I mean if you just focus on the person, and on the child and try and remediate whatever is going on in that kid’s neural processes and that kid’s whatever, you’re not going to affect change. So sometimes I think the environment is the way in.

Facilitator: …so that’s a really interesting piece that this Movement Matters Programme for your level three kids is a really useful programme but it totally hangs in with the total experience for that child. It’s definitely influencing then the cultural of the environment and the understanding of behaviour.
It is apparent that the programme has developed over the trial period as a tool to support a small cohort of students (Level 3) who require the input and a cohort of teachers who have the skills to facilitate such a programme.

Facilitator: So it’s now been seen as a core programme?

P1: …I don’t know would you call it a core programme. I see it as a programme, it’s not for everyone.

Facilitator: It’s a Level 3?

P1: Yes it’s a core Level 3 programme, we definitely feel that it’s more…

P2: Specialised

P1: Targeted. Targeted for the students that need it. And the teachers are confident to deliver it.

The participants expand on their rationale for selectively choosing schools and teachers to collaborate with.
P2: *With the Movement Matters programme, we still select the teachers to come along that we know are ready for it, professionally ready for it.*

P1: *If they need to have it, and the need has been identified for it. So a bit of both. But there has to be the need in the students, and there has to be the ability or at least the openness to taking on something like that.*

There is an emphasis on assessing individual referrals that emerge from teachers who want to be trained in the programme after hearing about it from colleagues in other schools. This is more evidence of occupational therapy practice based knowledge being shared between teaching professionals. Assessing each school and teacher is identified as important to ensure an optimum person-environment fit.

P1: *They self-select as well because a lot of these BfLs are meeting on a regular basis and case studies come up and they’re talking amongst themselves about what they’re using. So many of the BfLs say they’ve heard about it. You know one will say this is a great programme. Then they would say we would like to be trained in Movement Matters so that’s very powerful and is they’re looking for the training. They want it, they think it’s going to suit them and so we put them on a list. We don’t say were going to necessarily take them. They’ll certainly be put up for consideration, is that school at that point of time is the right place for this type of intervention. And that’s because there is a big commitment financially, of time wise, so a school needs to benefit, they need to know that students are going to benefit from it. You know so one size doesn’t fit all in this particular case.*

5.8.31 Summary Interpretation

The third semi structured group interview was carried out one calendar year after the first. It builds on the data from the second interview with evidence of further reflection and learning by the participants. There is particular focus on student’s skill development, interdisciplinary collaboration and scholarship of practice as method of generating new knowledge in an emerging area of practice. The following is a summary of my interpretations of the data from the third group interview.

- The theme of teacher-student co-regulation has become more apparent and may be related to the literature on trauma, attachment and co-regulation as described previously.
Teacher guidance of the student to self-reflect on their calmness as an important part of the programme emerged through the therapists' reflective practice and clinical reasoning.

Sustainability of the programme has been identified as an issue. Students may need elements of the programme to continue after completing their first full cycle to maintain any positive effects experienced.

The Movement Matters Programme can inform the SBP. These plans also serve as a professional reflection and planning tool for Behaviour for Learning teachers and have the capacity to be adapted relating to changing needs.

NBSS occupational therapy programmes are considered to be 'tools' or ' mediums' for students to develop and practice the skills required to engage in school occupations.

A new inter-professional method of knowledge generation is proposed involving teachers and occupational therapists. The occupational therapists have been using a ‘scholarship of practice’ approach with their teacher colleagues to develop practice and generate new knowledge in this emerging area. Key to the success of this scholarship of practice method has been the teacher’s openness to occupational therapy theory, and the cluster meetings where practice knowledge is shared.

Occupational therapy and teaching collaboration is found to be a successful method for developing each other’s practice and ultimately serving students who require additional support.

The occupational therapists are committed to constantly reviewing and adapting the Movement Matters Programme informed by practice based evidence. The aim is to improve the occupational engagement of students and to support the professional development of teachers and respond to the challenges that the students present.

The participants’ application of the Person-Environment-Occupation model and understanding of the practice context allows them to be realistic about how they can influence student’s experience of school.

The Movement Matters Programme has developed over the trial period as a tool to support a cohort of Level 3 students who require the input, and a cohort of trained and experienced teachers who have the skills to facilitate such a programme.

**Clinical Reasoning**
Conditional and procedural reasoning dominate the data from the third semi-structured group interview. The participants used conditional reasoning to recognise the importance of the co-regulation and cognitive elements of the programme to the student experience of the programme. The emergence of the scholarship of practice method to generate knowledge that would in turn better inform the participants’ clinical reasoning is evident of their procedural reasoning skills.

5.9 Summary of Objective Three

This concludes the data for the third study objective which aimed to map the clinical reasoning processes of the occupational therapists who developed and observed the Movement Matters Programme in use. This third objective contributes to the overall aim of the study of understanding occupational therapy practice development within an emerging area as it uncovers the therapists reasoning and provides insight into the way they practice within the setting.

This qualitative data communicates a distinctive story of practice development built on previous knowledge and work in the setting. The Movement Matters Programme emerged as a progression from the adapted Alert Programme and is described as an effective tool for regulating arousal levels in students that present with behaviours typical of ADHD and/or Sensory Modulation Disorder. In addition, the activities of the programme created a social environment which promoted the development of collaborative relationships between the participating students and their teachers. Most significantly, the data revealed that this practice was developed through an interdisciplinary scholarship of practice method and is a new contribution to the field of occupational therapy.
5.10 Chapter Summary

The study aim seeks to understand the process of developing the Movement Matters Programme within the emerging practice context of mainstream post primary schools and students with social, emotional and behavioural difficulties.

The pragmatic approach to the study has delivered a mixture of quantitative and qualitative data, that when combined, has addressed the three study objectives and overall aim of the study. The documentation relating to the first study objective, when studied using matrix analysis, provided evidence that the practice described adheres to core occupational therapy values. The second study objective analysed two standardised measures pre and post intervention. Although no statistically significant difference was found between the data sets, a profile of an underserved population emerged. Unsurprisingly, the student participant profile differs from the UK norms in most areas, particularly around self-efficacy, self-determination, and motivation as learners. Additionally, the data generated validates the teachers’ identification of the students as fitting the profile of a Level 3 student likely to benefit from an intervention like Movement Matters. The qualitative data related to the third objective communicates a distinctive story of practice development built on previous knowledge and work in the setting. The Movement Matters Programme emerged as a progression from the adapted Alert Programme and is described as an effective tool for regulating arousal levels in students that present with behaviours typical of ADHD and/or Sensory Modulation Disorder. In addition, the activities of the programme created a social environment which promoted the development of collaborative relationships between the participating students and their teachers. Most significantly, the data revealed that this practice was developed through an interdisciplinary scholarship of practice method and is a new contribution to the field of occupational therapy.

The historical and theoretical perspectives of developing practice in an emerging area has delivered new information, through quantitative data analysis about an underserved population and a distinctive story of practice development built on previous knowledge and work in the setting. Most significantly, the qualitative data revealed that this practice was developed through an interdisciplinary scholarship of practice method and is a new contribution to the field of occupational therapy.
The Results Chapter was guided by subjective interpretations of the data and results are discussed in relation to the literature. The Discussion Chapter that follows will focus on the main findings and their implications for generating knowledge in this area.
6 Chapter 6: Discussion

6.1 Introduction

The study aimed to understand the process of developing practice in an emerging context for occupational therapy with a focus on an educational programme for teaching self-regulation to students requiring individualized learning supports as in Level 3 of the NBSS model (see Chapter 2: Context). In reviewing the data presented in the Results Chapter, it is concluded that the mixed methodology approach was successful in achieving the three study objectives, sufficient to add new knowledge to this emerging area of practice.

This chapter discusses the most relevant findings for the profession related to the three individual objectives and concludes with the study limitations and recommendations.

6.2 Objective 1

The first question to be answered related to the contribution of occupational therapy theory to the Movement Matters programme. Does this student education programme offer unique perspectives of occupational therapy related to self-regulation in this group of students (Level 3) in the context of the classroom? The methodology used to address the first objective examined documentation on the Movement Matters Programme. The critique, conducted through matrix analysis indicated that the development and implementation of the Alert and Movement Matters programmes show evidence that all five principles of occupational therapy practice described by MacCobb (2012) were actioned. These were ‘person centred’, ‘occupation focused’, ‘collaborative relationships’, ‘context appropriate’ and ‘environment’. This result of the analysis of the practice is important as it adds credibility that the practice being described and studied has a strong foundation rooted in the literature published by the researcher’s clinical team and the Department of Education with whom they work. Showing evidence of person centred and occupation focused practice through collaborative relationships in school contexts using data provided by teachers and students demonstrates the person-environment-occupation fit (Law et al., 1996) of these occupational therapy programmes into educational environments.

There are also important matters to be discussed relating to the Behaviour for Learning Programme in which the NBSS OT programmes are situated and the culture of practice development that was nurtured between the two organisations involved.
6.2.1 Person-Environment-Occupation

This current study is about the development of occupational therapy practice with a focus on the Movement Matters programme. Therefore, within the context of examining practice development, the first and fundamental question to ask with regard to the Movement Matters programmes was, did it bring a theory led occupational therapy perspective to the school environment with the aim of promoting greater participation by those at risk of occupational marginalization or exclusion? Occupational participation and meaningful engagement is at the core of all theories in occupational therapy. In initial stages of development of the capacity building approach in schools, MacCobb (2012) adopted the Person Environment Occupation Model (Law et al. 1996) as a guiding framework as it justified what was considered a necessary focus on the school physical and cultural environment, including teacher and student attitudes in understanding challenging behaviours. Environmental triggers and antecedents to behaviour were examined and notably, responsibility for managing the behaviour did not wholly reside within the child.

In the first pilot intervention with two schools, perceived success of occupational therapy by school staff was related to their attitudes towards students and their behaviour (MacCobb, 2012). As part of the initial approach to service development of the whole school environment, at the behest of the NBSS, all staff in the partner schools were invited within their timetabled working hours to an introduction session given by an occupational therapist on the PEO Model (Law et al., 1996). The explanation of occupational therapy within the PEO model made sense to some teachers, and opened a mind-set for review.

The development of the Alert Programme for whole class groups of First Year students (aged 12 to 13 years) arose from the initial pilot in those two schools. Further reporting of research on the adaptation of the Alert Programme facilitated challenging behaviour to be viewed in a ‘neutral’ manner, and not be perceived as ‘intentionally disruptive’. The sensory processing perspective put forward that some individual students respond to challenges to their sensory systems from the demands of classroom environment, and if changed would make it easier for the student to attend to learning tasks. Additionally, the mandated research conducted by the NBSS (NBSS, 2015b) with subject teachers who taught students involved in the Alert Programme were also asked for their opinions on specific aspects of programme carry over by students into their other classes. The wider school environment as a factor in supporting students in their self-management/regulation was highlighted.

With regard to the concept of ‘occupation’, MacCobb (2012) considered that going to school, being successful in learning and experiencing belongingness in a school
community was perceived as occupational engagement and important to support in those with complex needs. Activity analysis and adaptation of the environment and a deep understanding of factors affecting occupational engagement are essential skills in occupational therapy. The challenge for the inclusive school system is to offer meaningful engagement for each student regardless of their ability. The development of an occupational therapy model, through collaboration within the NBSS focused on the development of learning approaches to support students and Behaviour for Learning teachers. Some key concepts such as keeping a person-focus can be seen in co-occupation or co-construction of how sessions and programmes were planned and in how relevance and verification of learning in a programme could also be indicated by the student and not just by the teacher. Thus, applying this to the Movement Matters programme, the content and learning methods should offer structured learning tailored within the learner’s capacity that also allows for personal goal setting and self-verification of learning. Ultimately, it was expected that with sufficient practice-based evidence that school systems would also verify the individual’s learning through these programmes.

With regard to the ‘person’ aspect of the PEO Model, a Disability Studies perspective and the Participatory Occupational Justice framework (Whiteford & Townsend, 2011) puts responsibility on the school system for supporting challenging students in meaningful participation in school. The aim of the NBSS was to support positive learning experiences in school while recognising that this may be difficult. Nonetheless adopting a partnership approach with the student, parents, school management and additional teacher supports, it was expected that this could be achieved. This shared appreciation of the ‘person’, and guided by theories such as self-determination (Ryan & Deci, 2000), emphasised the value of student engagement in learning to his own satisfaction as well as that of his school community. One example of this is that attendance rates in sessions by this cohort were interpreted as indications of relevance of the programmes and interventions. MacCobb (2012) clearly stated the integrity of the student’s right to say “No” to learning challenges as being perfectly acceptable. The challenge for therapists and teachers was to offer opportunities and settings that were sufficiently attractive and appropriate for the abilities, interests and learning needs of the student. The school’s support for encouraging student attendance was seen when, suspended from regular classes for disruptive behaviour, students were allowed to come to occupational therapy interventions. This demonstrated appreciation of a core value of occupational therapy, that the student had right to participate or not, and this choice was not negatively valued.
6.2.2 The Behaviour for Learning Programme

The matrix analysis demonstrates that these student centred education programmes (Alert and Movement Matters) offer unique perspectives of occupational therapy related to self-regulation to a specific group of students receiving ‘Level 2’ and ‘Level 3’ support to promote their behaviour for learning skills. Central to this evidence of action are the voices of the students and teachers reported in the adapted Alert Programme studies (MacCobb et al., 2014b; MacCobb et al., 2014a; NBSS, 2015b) and the first feasibility study of Movement Matters (NBSS, 2015d). Reporting the student and teacher voice data from the Movement Matters feasibility study is important as it reassures the reader that the programme under study is sensitive to the needs, desires, interests and cognitive development of students as recommended by Dewey (1910). It also demonstrates that the programme is valued by those who it is designed to support and those whose job it is to provide the support. Describing and critiquing the occupational practice in this emerging context also demonstrates that the programmes and interventions introduced into the schools are relevant to the everyday experiences of students and teachers and have been designed with sustainability in mind. The notion of the ‘helicopter’ therapist descending on a school to support the needs of an individual student and then withdrawing when that ‘episode of care’ is complete does not necessarily build a school’s capacity to support all students learning including those with special educational needs such as SEBD. The design and implementation of specific learning programmes from an occupational therapy theory base with on-going in-school support from occupational therapists promotes interprofessional learning and professional development opportunities.

6.2.2.1 Whole school approach

It is worth noting the advice contained in the NBSS Level 3 student voice report (NBSS, 2014) that highlighted the risk of focusing on building the behaviour for learning skills of students receiving Level 3 support alone without taking into account the wider environment of the school. This is also echoed by Cooper and Jacobs (2011) who recommend that schools develop and implement positive approaches to problem behaviour at the whole school as well as individual student level. Constructive school interventions focusing on developing a positive social/emotional climate to ensure that learning is conducive to students with difficult behaviour could, in time, lessen the need to categorise these students as EBD which carries with it a host of potential dangers for the individual and the school (Banks et al. 2012). NBSS occupational therapy interventions such the adapted Alert Programme and the Movement Matters Programme are implemented within the
context of the whole school experience for the student. For example, NBSS occupational therapists deliver whole staff seminars when the adapted Alert Programme is being used in a school to promote the scaffolding of language and facilitation of sensorimotor strategies within the mainstream classroom. In addition, there is a significant emphasis in BfL teacher training events on collaboration with mainstream teacher colleagues to encourage the spread of self-regulation language and strategies school wide. There is also time allocated within the BfL teacher training for previously trained teachers to present case studies on how they were successful in building the adapted Alert Programme from a ‘Level 2’ intervention initially into school wide ‘Level 1’ piece of work. One such example is a school that completed elements of the programme as part of the transition week for first year students transitioning from primary school. By equipping all students with the vocabulary of the programme, it created a shared language between all students and teachers to promote a learning environment that was tolerant of fluctuating arousal levels and supported same with sensorimotor breaks and strategies. In another school, following completion of the adapted Alert Programme and with support from the BfL teacher and NBSS occupational therapists, students elected to develop a ‘sensory room’. The room was designed as a place to go when a student was feeling overwhelmed or in a high state of arousal. As the students had learned about the effect of sensorimotor strategies on arousal levels, they designed the room as a calming space taking factors such as colour, fabric and noise into account. The room was developed as a resource for the whole school to use with support from the mainstream teaching staff. These are important examples from practice that demonstrate the impact of the Behaviour for Learning Programme teacher on the wider school environment using occupational therapy informed theory and programmes.

6.2.2.2 Culture of learning
Banks et al. (2012) refer to a tendency to label socially disadvantaged boys as ‘disturbed’ rather than ‘disruptive’ which results in an examination of within child/family issues rather than a focus on any inadequacies in the learning environment. Within a performance driven standards dominated educational system there is the real risk that boys from socially disadvantaged backgrounds can be excluded from classrooms and leave education early and be classified as ‘economically inactive’ (Riddell 2008). This risk of economic inactivity can be traced back to a student’s experience in the education system where their needs were not met, potentially due to misidentification of their learning needs as described previously. This misidentification can lead to stereotypes and lowered expectations with implications for school engagement and motivation in the short term (McCoy & Banks,
2012). It could be argued that the BfL classroom is in itself a form of exclusion as students are withdrawn from the mainstream and potentially miss important core subject classes and could be perceived as different from their peers and at risk of alienation. However, students attend a maximum of one class period out of nine periods a day and are timetabled to ensure they are not missing the same subject every day. Each student’s ‘behaviour for learning plan’ is tailored to their needs which may not require daily intensive and individualised intervention. For example, the BfL teachers also provide ‘Level 2’ support to students through a weekly ‘Check and Connect’ programme which is an evidence-based structured adult mentoring programme that aims to promote student engagement at school and with learning. A variety of ‘Level 2’ social emotional learning programmes are hosted within the BfL classroom. This would include students with identified learning needs and other students without identified needs that may benefit from such interventions to build social competence for example. Behaviour for Learning teachers also frequently collaborate with their mainstream colleagues and team teach in mainstream classrooms on subjects such as organisational skills, self-regulation and emotional resiliency. The Behaviour for Learning Programme is envisaged as a resource for the benefit of the whole school and not just as a place where the ‘bold kids’ go. Most importantly, the voice of the student receiving the support of the Behaviour for Learning Programme should be to the forefront in this discussion. Data from the NBSS ‘Student Voice’ report found that 83.1% of students thought that the work they had engaged in the Behaviour Support Classroom had helped them and “resulted in them feeling more content, calmer and happier in school” (NBSS, 2014, p.23). “As one of the fundamental aims of NBSS Level 3 support is to enable students to have a more positive learning experience” (NBSS, 2014, p. 28), the ‘Positive In-School Curriculum Framework’ curriculum of the Behaviour for Learning Programme including the occupational therapy informed programmes have been found to positively contribute to this fundamental aim as outlined in the matrix analysis and in the NBSS Student Voice report.

A combination of over-identification of EBD, under identification of learning disabilities and consequently lower performance in literacy and numeracy can impact on school instructional and organisational policies resulting in lower student academic expectations (Thrupp, 2006). The consequence of this may mean that the most disadvantaged schools are opting for an environment of ‘care’ rather than ‘challenge’ (Darmanin 2003), with the role of the teacher straying more and more into the pastoral aspects of the student, perhaps at the cost of their educational progress. The Behaviour for Learning programme has a strong emphasis on learning attainment and recognises that many challenging
behaviours are rooted in a student’s lack of confidence in an area of learning with ‘academic literacy, learning and study skills’ outlined as one of the core areas of the NBSS framework as described in Chapter 2. NBSS occupational therapy programmes such as the adapted Alert and Movement Matters programmes also hold at their core the learning experience of the student. There are interesting comparisons to be made between the data presented in the matrices and the Deweyan philosophy on learning reported in the literature. For instance, Dewey called for subject matter to connect to student’s needs, desires and interests while being at the appropriate cognitive level to achieve the just right challenge. The data reported by students in both Alert and Movement Matters studies confirm that the content was enjoyable, challenging and relevant to the experience of being a student in a mainstream post primary school. Dewey also recommended that learning experiences should have a clear purpose, an understanding of the surrounding conditions, knowledge of what occurred before, so that it could allow reflection and analysis of issues and experiences. As Movement Matters builds on the Alert Programme, both students and teachers have a vocabulary and skill set developed in relation to self-regulation prior to moving onto a more intensive, individualised intervention. Developing social competence is one of the main goals of the educational experience according to Dewey (1910). Both programmes strongly promote student reflection of their in-school experiences with the goal of learning from these experiences in order to grow and become more competent social beings. The nature of the relationships between teachers and students during the Alert and Movement Matters sessions is also reflective of Dewey’s vision of a child centred learning experience in which both parties learn in partnership while trying out effective techniques of teaching and learning. The data presented in the matrices is also a potential contribution to the gap in the literature related to shortcomings within Dewey’s educational philosophy identified by Sikandar (2015). The criticism focuses on the absence of learning objectives and a lack of clarity as to how to set up systems that can see through the inception of ideas to the conclusion of the experiences and to gauge the growth and development of students. The programmes critiqued in the matrices show evidence of a structured learning experience with clear objectives, reflective activities and a focus on measurable outcomes for the student. Both the adapted Alert Programme and Movement Matters manuals and session materials are available in the appendices where session objectives and reflective activities can be reviewed.

6.2.2.3 Self determination

The Behaviour for Learning programme is also well placed to develop self-determination in the students it supports. The protected space of the Behaviour for Learning classroom
offers the opportunity to create a social environment that keeps autonomy, competence and relatedness at the core of its practice. The work of Ryan and Deci (2000) suggests that social environments can facilitate or predict intrinsic motivation by supporting or undermining people's innate psychological needs. They maintain that by failing to provide supports for competence, autonomy, and relatedness of children and students, schools can be contributing to the alienation and ill-being of those in their care as highlighted in the Irish context more recently by Banks et al. (2012) and McCoy and Banks (2012). As psychological-need deprivation appears to be a principal source of human distress, Ryan and Deci (2000) propose that ‘interventions would do well to target these primary foundations of mental health’ (p.74), a recommendation that has relevance to the occupational therapy programmes under study here. Figure 41 below outlines examples from the Movement Matters programme that promote the innate psychological needs of competence, autonomy and relatedness as part of the learning experience as described by Ryan and Deci (2000).
**Competence**

- The activities of MM are designed with the just right/optimal challenge in mind. The activities are difficult enough to spark motivation but also designed that the student can achieve a level of competence relevant to their ability.
- The teacher’s role is to provide ‘positive reinforcement feedback’ creating an environment of learning and discovery rather than monitoring and evaluation.
- Students are able to observe their competence improve and progress by repeating each session and seeing measurable improvements in performance of activities such as balance and coordination.

**Autonomy**

- Students were invited to participate in the programme and their attendance remained their choice throughout.
- As tangible rewards can undermine intrinsic motivation, no external rewards are provided for participation in MM. Students are rewarded by the intrinsic satisfaction of participating in a challenging and co-regulated learning experience with a peer and significant adult.
- Student’s feelings are acknowledged and recorded twice every session on the ‘calmness scale’.

**Relatedness**

- While there is an element of competition in some aspects of the programme, the activities of MM are predominantly designed to encourage co-operation between the two participants.
- The teacher is present as an encouraging adult, not an inspector of behaviour or evaluator of performance.
- A ‘secure relational base’ was generally established for students as teachers were selected specifically for the MM programme due to their previous work as a BfL with the NBSS OTs and would therefore have existing relationships with students.

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*Figure 41. Core elements of self-determination theory applied to the Movement Matters programme*
6.2.3 Practice Development

The matrix analysis of the adapted Alert and Movement Matters programmes is also important in the context of developing practice in an emerging context which is at the core of this study. The value of having an academic occupational therapist in a supervisory position who could envision a theory driven service should not be understated. This facilitated the novice occupational therapists working in this emerging area to base their practice on an application of theory rather than a reliance on traditional evidence based practice, of which there was little. In retrospect, publishing peer reviewed papers and reports on the practice being developed contributed to a bank of theory informed practice that could be analysed in this study and reported on. This documentation on practice provides a record of the work and allowed it to be shared with the wider community of teachers and occupational therapists. It also provided evidence of practice to the Department of Education that would ultimately inform the decision to include occupational therapy in the recently announced Demonstration In-School Therapy Project (DES, 2018). The Demonstration Project will explore how occupational therapy and speech and language therapy can support the learning needs of all students under a three tiered continuum support model in 75 early years settings and 75 schools. The project is part of the government’s overall plan to review the role of special needs assistants (SNAs) in schools and explore how other disciplines including occupational therapy can support students’ learning needs within the school context. The NBSS occupational therapy team’s publications are referenced within this policy advice paper as examples of successful in-school occupational therapy practice in Ireland (NCSE, 2018, p.68), thus setting a precedent for including occupational therapy in the Demonstration In-School Therapy Project. This is further evidence of theory informing practice and consequently influencing and effecting educational policy for students with additional educational needs. This data also confirms that the NBSS partnership with the Discipline of Occupational Therapy also provided a positive culture for practice development. Manley, McCormack & Wilson, (2008) describe practice development as a continuous process affecting the culture of practitioners that fosters learning and brings about transformation of individual and team practices. It is enabled by facilitators who authentically engage with individuals and teams to blend personal qualities and creative imagination with practice skills and practice wisdom. This is sustained by embedding both processes and outcomes in the strategic plan for the service or work place. There would have been no publications without the active support by both agencies.
6.3 Objective 2

Standardized measures are used in all new initiatives by the NBSS as part of their evidence based practice approach. The study’s second objective was to understand the value of the programme from a positivist perspective. This paradigm adopts a reductionist view where all phenomena can be counted, measured and understood. Therefore, an understanding of the value of Movement Matters is guided by the results of the pre and post Pupil Attitude to School and Self (PASS) and Strength and Difficulties Questionnaire (SDQ) measures. This data generated a profile of this student group and allow comparison against a large UK student sample.

6.3.1 Pre and Post Comparison

Based on positivistic principles, no statistically significant findings were identified suggesting that the Movement Programme had no ‘effect’ on the student participants and may not be a worthwhile programme for the client group in the setting. However, the measures were not designed to capture the learning objectives of the Movement Matters Programme. The focus of questioning was on the students’ life in school, not their experience in the Movement Matters programme alone. In addition, the Movement Matters programme lasts for one month, and changes in how a student feels about school may take longer to change, particularly if the previous experiences have been of failure and difficulty. It would be interesting however to modify the questioning and relate it to the student experience of this programme alone and note if this captured some change in self-efficacy, self-determination and motivation as learners, three key areas where the student profile in this study differed from the UK sample.

Moreover, the practice reality is that the Behaviour for Learning teachers continue to use the programme and are supported by the NBSS in doing so (NBSS, 2015d). This feasibility study, the results of which were reported in Chapter 5 noted positive findings of teacher and student experience of using the programme with benefits to the behaviour for learning skills of students. This qualitative student voice data will be referenced later in this section in relation to alternative outcome measurement possibilities. This ‘practice based evidence’ appears to have influenced the NBSS’s decision making to continue with the programme for targeted students.
6.3.2 Student Participant Profile

Reporting the outcomes from Objective Two also provided interesting data relating to how the student participants experience school. The main finding to emerge from analysing this data was the considerable disparity between how the students in this study experience school and life in comparison to their peers in large studies conducted in the UK (GL Assessment, 2016, Meltzer et al., 2000). The mean scores in all of the PASS factors and most of the SDQ scales in this study were considerably lower than the mean scores in the UK sample. This data provides the occupational therapy profession with insights related to self-efficacy, self-determination and motivation as learners on a previously underserved population as highlighted by Marczuk et al. (2014).

It is a cause of concern that students who have been in the Irish education system for approximately eight years differ substantially from the profile of the UK sample. This cohort of students have not been supported by in-school occupational therapy up until now. By the teachers identifying them for the programme demonstrates that they understand their needs but the literature also indicates that teachers do not have the skills and resources to adequately support these learning needs (Scanlon and Barnes-Holmes, 2013). However, the collaborative approach between occupational therapists and teachers has delivered an intervention that appears to be an enjoyable and effective self-regulation programme with spin off of greater participation in classes after the programme as reported by students and teachers (NBSS, 2015d). Thus, occupational therapy theory and framework has contributed something meaningful as part of inter-professional practice. It is argued that occupational therapy contribution to education within a three tiered, collaborative consultative model (Fuchs and Fuchs, 2006, Lane et al., 2009, Missiuna et al., 2012, Sugai and Horner, 2002, Villeneuve, 2009) to students with SEBD is valuable.

In developing the Movement Maters programme, the occupational therapists drew on Ayres Sensory Integration Theory (Ayres, 1972, 1979), attachment theory (Cook, et al., 2005, Gerhardt, 2013, van der Kolk, 2005) and the Person-Environment-Occupation model (Law et al., 1996) which resulted in a unique, context specific ‘Level 3’ intervention accompanied by weekly coaching, mentoring and review related to the specific needs of each student. In keeping with recent best practice in inclusive education (NCSE, 2014), and in-school occupational therapy practice (Missiuna et al., 2012, Villeneuve, 2009), the Movement Matters programme was conducted within the mainstream education context and also built on the capacity of educators to practice with students with SEBD.
6.3.3 Reflections on Outcome Measurement

Referring back to realist evaluation (Pawson & Tilley, 1997), programmes such as Movement Matters are ‘theories’ which are embedded in the complex social systems of schools where desired outcomes are dependent on (1) the individual capacities of students and teachers, (2) the interpersonal relationships created between them, (3) the institutional environment of schools that promote alternative views on behaviour and learning and (4) the wider educational system and policy makers that support or undermine the participation of students with diverse learning needs. With these factors in mind, setting out to capture the benefit of an occupation based intervention on standardised measures of mental/physical health may have been aspirational. Cutchin (2013) posits that “occupation does not lead directly to health or other physical outcomes. What occupation does is make people better at living…” (p.294). The qualitative data from students and teachers reported in the Movement Matters feasibility study (NBSS, 2015d) indicated that the programme did indeed improve the school experience of the students who participated in it. Having established that the standardised measures used in this study may not be the most effective method of capturing change or measuring outcome for this cohort of students following intervention, alternative methods of outcome measurement are discussed here. Further discussion relating to alternative standardised measures for use in the school setting is also outlined in the ‘limitations’ section of this chapter.

Whaley-Hammel (2007) links participation and well-being to quality of life and suggests that this should be the focus of all occupational therapists in their practice. This theme is developed further with the occupational well-being framework proposed by Doble and Caron Santha (2008). They contend that occupational therapists should re-think the focus on measuring occupational performance outcomes and consider the importance of individual's subjective occupational experiences. The authors propose that “individuals’ subjective experiences of their occupational lives are an important occupational therapy outcome” (pp. 186), and that individuals are more likely to experience occupational well-being when they choose and engage in occupations that consistently meet their ‘occupational needs’. The seven occupational needs referred to by the authors are accomplishment, affirmation, agency, coherence, companionship, pleasure and renewal. The NBSS’s commitment to capturing the student voice as part of its practice development and outcome measurement is reassuring and demonstrates the value it places on the subjective experience of the student as well as quantitative tools and measures. However, Doble and Caron-Santha (2008) advise that further development of the ideas presented in
their paper require empirical validation and research designed to determine the validity and universality of the seven occupational needs with diverse populations is needed. Valid measures of occupational well-being are also needed that can be used to determine the effectiveness of interventions in enabling individuals to meet their occupational needs and experience greater satisfaction and fulfilment. In order to demonstrate the potential applicability of such a framework to school based occupational therapy practice, Table 30 below draws in part from the Movement Matters Feasibility Study (NBSS, 2015d) and charts examples of how the Movement Matters programme could meet the ‘seven occupational needs’ and with further development, could contribute to the literature in this area.

Table 30. Occupational Needs Framework (Doble & Caron-Santha, 2008)

<table>
<thead>
<tr>
<th>Occupational Need</th>
<th>Movement Matters Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Accomplishment</td>
<td>• The MM programme promotes gradual skill mastery by grading the difficulty of exercises and repeating sessions to build competence.</td>
</tr>
<tr>
<td></td>
<td>• Students report enjoying the programme and feelings of contentment when mastering challenging activities (NBSS, 2015d).</td>
</tr>
<tr>
<td></td>
<td>• 70% of students indicated that they felt that doing MM had helped them to feel calmer in all or most of their lessons. (NBSS, 2015d, p. 35).</td>
</tr>
<tr>
<td></td>
<td>• 77.8% reported that they felt MM had helped them with their learning in the classroom (NBSS, 2015d, p.37)</td>
</tr>
<tr>
<td></td>
<td>• 92.6% indicated that MM had helped them with their behaviour in the classroom (NBSS, 2015d, p.37).</td>
</tr>
<tr>
<td>2. Affirmation</td>
<td>• The students’ role as a successful learner and member of the school community is affirmed by the teacher’s commitment to supporting their learning needs through an intensive, daily intervention such as MM.</td>
</tr>
<tr>
<td>3. Agency</td>
<td>• Students choose to participate in MM every day with a peer and a teacher and are free to stop participating at any time.</td>
</tr>
<tr>
<td></td>
<td>• Students can choose the warm-up and cool down activities that they prefer.</td>
</tr>
<tr>
<td>4. Coherence</td>
<td>• Structured learning programmes such as MM can provide a positive learning experiences for</td>
</tr>
</tbody>
</table>
and want to become, they will experience an increased sense of coherence.

students who regularly experience failure in the academic aspects of school.

5. **Companionship**
An individuals’ need for companionship is met when they engage in occupations with others who share common experiences, interests, values or goals.

- The MM programme offers a daily co-regulated experience where students work towards a common goal in a shared activity of interest.
- Most students (59.3%) indicated that MM had helped them get along better with other students (NBSS, 2015d, p. 38)

6. **Pleasure**
Pleasure may be derived from the anticipation of engaging in enjoyable or fun experiences. Opportunities to experience pleasure may also be increased when individuals engage in occupations with others.

- All of the students indicated that they enjoyed MM and nearly all (96.6%) stated that they liked doing it every day (NBSS, 2055d, p.33).
- Most students (66.7%), thought that MM had helped them to get along better with teachers in their school (NBSS, 2015d, p.38).

7. **Renewal**
Renewal is experienced when individuals engage in occupations that provide a sense of inner peace, abandon, relief, and mental clarity, and leave them feeling refreshed, re-energized, and rejuvenated.

- Students review their levels of calmness before and after in each session promoting self-reflection and tuning into one’s body and energy levels.
- Seventy percent of students indicated that they felt that doing MM had helped them to feel calmer in all or most of their lessons. (NBSS, 2015d, p. 35).

There are a number of influencing factors that affect an individual’s ability to arrange their occupational lives to consistently meet these occupational needs. Personal and environmental dynamics will impact on achieving occupational needs be it as a result of injury/illness or change in a person’s social, cultural, political, economic or physical environment. The availability of occupational opportunities is another factor that can threaten individuals’ success in meeting occupational needs particularly if occupational choices are limited. Doble and Caron-Santha (2008) identify a person’s ability to orchestrate their occupational lives in ways that promote the meeting of occupational needs to be highly influential on occupational well-being. As previously established in the literature, students with SEBD are at risk of occupational deprivation (Marczuk et al. (2014) and alienation from school potentially resulting in prolonged disengagement from employment and social exclusion (Riddell 2008). The ‘Occupational Wellbeing Framework’ is a potentially useful lens through which to view the school experience students with SEBD to ensure that these needs are being met as much as is possible within the curriculums and activities of school.
Doble and Caron-Santha (2008) conclude that “by working in collaboration with clients or advocating on their behalf, occupational therapists can ensure that clients have access to occupations that have the potential to meet their occupational needs” (pp. 189). This is particularly relevant to school based occupational therapy in which building staff capacity and influencing the physical, social and cultural environments of schools including curriculums is a major part of the role. The NBSS occupational therapy team have always recognised the challenges of meeting the individual needs of all students receiving ‘Level 3’ support within the Behaviour for Learning programme across Ireland. However, by developing structured learning programmes from occupational therapy theory that teachers can implement with support in schools, students can autonomously develop competence in graded learning experiences in supportive peer and adult relationships. Recognising this approach to school based occupational therapy practice will be challenging for some practitioners who have become accustomed to a ‘clinic based’ approach of assessing individual deficits and working to demonstrate occupational performance outcomes for that individual. While such an approach will always remain relevant and appropriate for a cohort of children who require individualised clinical support, others can successfully have their needs supported within the mainstream school environment with teacher led interventions at Levels 1 (universal) and 2 (targeted) of the continuum of support model. Additional discussion relating to practice change for occupational therapists providing support to schools will be outlined in the next section.

Finally, occupational therapists practicing in Irish schools should consider the following educational outcomes envisaged by the National Council for Special Education for students with additional learning needs when determining intervention plans;

- Academic achievement-related outcomes (such as literary, numeracy, examination results);
- Attendance-related outcomes (such as school attendance, early school leaving);
- Happiness-related outcomes (such as wellbeing, confidence, positive relationships, self-esteem, attitude to school and learning, engagement in extra-curricular activities, quality of life indicators);
- Independence-related outcomes (such as resilience, socialisation, mobility, use of assistive technology, life skills);
- End of school outcomes (NCSE, 2014).
6.4 Objective 3

In the absence of evidence based practice literature, examining the clinical/professional reasoning of therapists is of value to the profession so as to understand how practice can develop in new areas. Practice development is enabled by individuals and teams who blend personal qualities and creative imagination with practice skills and practice wisdom (Manley, McCormack & Wilson, 2008). The quality of these skills and wisdom may be difficult to capture, however, the reflexive thinking associated with professional practice can offer valuable insights into how and why therapists think and act. This has been defined as ‘clinical reasoning’ (Unsworth, 2011). Thus the third objective was to explore the clinical/professional reasoning process of the occupational therapists that developed and observed the programme in use. This should make clear the theoretical underpinnings and combining the art and science of practice related specifically to this programme in this setting (Harries & Duncan, 2009).

6.4.1 Scholarship of practice

The most relevant finding for the occupational therapy profession to emerge from the clinical reasoning data was the utilisation of the scholarship of practice method (Hammel et al., 2002, Kielhofner, 2005b, Kielhofner, 2005a) while collaborating with their teacher colleagues to develop practice and generate new knowledge. The three semi structured group interviews in this study report in detail, the roots of this process from the early days of practice leading to the development of the Movement Matters Programme, a long process of interdisciplinary collaboration. The nature of the practice context also influenced the use of the scholarship of practice method. It was a response to the challenge of working in a nationwide service that supports 140 schools, 75 Behaviour for Learning Teachers and an average of 1000 ‘Level 3’ students per year. Developing schools’ capacity to support students with SEBD through manualised interventions like the Alert and Movement Matters Programmes accompanied by collaborative consultation (Villeneuve, 2009, Villeneuve and Shulha, 2012) was deemed to be the most effective use of occupational therapy resources as opposed to the ‘direct model’ of student withdrawal for ‘therapy’ (Bayona et al., 2006, Wintle et al., 2017). What follows is a review of the scholarship of practice approach to knowledge generation. This documentation of the scholarship of practice model between professions is a new contribution to the field of occupational therapy and is recently peer reviewed and published for the benefit of the profession (Fitzgerald and MacCobb, 2017).
Scholarship of practice has been identified as a way of growing relevant theory from within practice, to support and promote that practice (Schön, 1983, Argyris and Schön, 1974, Creek and Ormston, 1996) and has been documented in occupational therapy literature over the past four decades (Hammel et al., 2002, Kielhofner, 2005b, Kielhofner, 2005a, Schön, 1983, Ikiugu et al., 2009, Leclair et al., 2013). Scholarship of practice involves conducting research that directly responds to and contributes to practice, linking with individuals and organisations outside of the academic department to develop new educational practice and research opportunities and the development of synergies to advance practice and scholarship simultaneously (Hammel et al., 2002). Scholarship of practice, as a method of generating theory from practice is particularly important in emerging areas where the literature does not provide significant or specific evidence for that practice environment. An advanced level of clinical reasoning is required by experienced therapists who can offer a unique perspective on occupational performance and engagement in distinctive settings. According to Kielhofner (2005a), Kielhofner (2005b), the two biggest barriers to effective linking of scholarship and practice are the disparities between where knowledge is generated and where it is used (academic and practice settings) and by how knowledge about practice is valued by the different stakeholders. For academics, knowledge is judged by rigour of research method and ultimately peer reviewed publications, whereas practitioners and clinicians value knowledge by what it allows them to do in practice and the outcomes generated. Kielhofner (2005a) emphasised the importance of striking the balance in conducting research as a method of knowledge generation which supports both academic theory and real world practice. A number of authors have published case studies of scholarship of practice methods implemented in occupational therapy settings (Peterson et al., 2005, Forsyth et al., 2005). Typically, this literature relates to the connections between academics and practitioners within the discipline of occupational therapy alone. The unique context of this study relates to the partnership between staff in the Discipline of Occupational Therapy in a university and a national service part of the Department of Education. The shared endeavour was to bring another perspective to support student participation in school.

6.4.1.1 Interdisciplinary collaboration

There is little literature published on the implementation of an interdisciplinary scholarship of practice approach, such as between occupational therapy and members of the teaching profession. The uniqueness of this outcome is the description of how occupational therapists collaborating with teachers, contributed to a national service in the school setting through a process incorporating key elements of the scholarship of practice model.
Collaboration is a process of problem solving by team members, each of whom contributes his or her knowledge and skills and is viewed as having equal status (Rainforth et al., 1992).

6.4.1.2 Building the Scholarship of Practice

The interrelationship of evidence-based practice, clinical reasoning and practice based evidence overcome the limitations of these individual approaches to generating knowledge. The collaboration between occupational therapists and teachers for generating knowledge is an example of the application of a scholarship of practice model. Figure 42 below outlines how the knowledge generation principles described by Kielhofner (2005b) are evident in this practice context.
6.4.1.3 Applying the Results of Research to Practice

The combination of advanced clinical reasoning and practice based evidence informed the decision that in order to address the complex needs of Level 3 students, a new programme was needed. ‘Movement Matters’ was designed by the occupational therapist and experienced teachers. Thus, this further development is knowledge being returned to teaching practice in schools. Peterson et al. (2005) refers to completing the cycle of scholarship of practice when evidence is brought back to practice.
6.4.1.4 Outcomes of Scholarship of Practice

The process of programme development and refinement described was only possible with the ongoing professional expertise of the teachers who use the programmes and who also have a direct influence on their content through a process of interdisciplinary functioning. The data generated via the matrix and the interviews show that this is initiated at training days where the teachers are introduced to the theory behind the programmes and to the content and structure of the sessions. Planning and problem solving for the commencement of the programme starts on that training day and continues for the duration of the intervention through weekly occupational therapy visits to the school, student interaction and phone and email correspondence. This collaboration endures following the completion of the programme through engagement in the research process in the form of questionnaire completion, interviews, focus groups and cluster meetings. Cluster meetings provide teachers from schools nationwide with the opportunity to meet collectively to critique the programmes with the goal of providing the developers with their professional and practical expertise on how the intervention can be improved for the next cohort of students and teachers. This information also informs the therapists whether the theory is applicable to the practice setting. While the focus of this study has been on the development of practice focusing on two self-regulation programmes, NBSS occupational therapists continue to develop other interventions for the setting. These interventions have focused on social, motor and organisational skill development and have been born out of the same scholarship of practice approach with teacher and student perspectives playing central roles in the identification of need and refinement of programmes to best serve the students and teachers using them.

This collaboration between the academic Discipline of Occupational Therapy, and the state’s Department of Education’s support service is unique in the field of occupational therapy. At the time of the conception of this partnership, there was little evidence informed theory driven practice related to working with students with social emotional and behavioural difficulties in mainstream post primary schools. It was this lack of research in the area that inspired the adaptation of existing interventions and the development of new programmes for use by teachers for the benefit of students’ engagement in, and access to learning.

The relationship between the occupational therapists (academic and practitioner) and teachers in the schools is where the scholarship of practice model is alive. In Figure 43
below, the practice based application of scholarship of practice identified by Hammel et al. (2002) is applied to the development of the Movement Matters programme.

**Figure 43. Key elements of Scholarship of Practice (Hammel et al., 2002) applied to the practice setting of the NBSS.**
Figure 44 below describes how practitioners generate knowledge for practice and outlines the delivery of practice based evidence. The documentation of this process in the context of the work between the University and the Department of Education is important in demonstrating the value of scholarship of practice in advancing knowledge in occupational therapy. Forsyth et al. (2005) found in their study that the collaborative process between academia and practitioners has led to clinically useful outcome measures being available for the profession. This is also true of the adaptation of the ‘Alert Programme’ and the development of the ‘Movement Matters’ Programme resulting from interdisciplinary collaboration between teachers and occupational therapists in academia and in practice. Without practice being informed by theory and theory consequently being influenced by practice, mediated through clinical reasoning, the continued development of a knowledge base unique to the profession of occupational therapy would be in doubt. The process of both academia and practice across two professions contributing to the development of the Movement Matters programme has led to a knowledge base in this specific setting that was previously underserved (Marczuk et al., 2014).

The documentation of this inter-disciplinary scholarship of practice is also a potential contribution to the literature relating to ‘tensions’ in OT-teacher relationships as reported by Wintle et al (2017). ‘Ability to build relationships’ was one of the major themes identified by the authors in their investigation into the common pitfalls of the collaborative process. This theme focused on tensions that impeded the OT and teacher from forming a co-equal relationship. These tensions included “personality conflicts, developing goals unilaterally, the OT acting as an expert, inconsistent contact preventing a relationship from forming, the OT feeling unwelcome in the school/classroom, the teacher being defensive or closed to the OT being in the classroom, the teacher feeling insecure and judged by the OT, and feeling a loss of professional identity among special educators in the presence of OTs” (p. 334). As is documented in Figures 42, 43 and 44, teachers play a central role in the construction of new knowledge and their expertise is considered invaluable in the development of new and refinement of existing school based programmes. Investing time in relationship building is critical for the long term implementation of interventions and programmes and for the in-school support aspect of the collaborative process. Support structures such as regional training events, teacher cluster meetings, communities of practice and regular email and phone support should be considered vital elements of the partnership process.
**Practitioners generating evidence for practice**

1. Recognising the need for self regulation programmes and sharing of sensory theory with school communities (MacCobb, 2012).
3. Data provided by teachers and students and clinical reasoning skills of OTs informed further adaptations and development of the teacher lead programme (NBSSb, 2015).
4. Clinical reasoning of OTs in the practice context identified the shortcomings of the ‘Alert Program’ which lead to the development of the Movement Matters Programme grounded in sensorimotor theory.
5. Teacher's engagement with research process and collaborative working provided OTs with deeper understanding of the applicability and practicality of sensory integration theory and interventions.
6. Teachers contribute to the revision process of interventions.
7. Teachers advise on programme's practical utility.
8. Teachers collect data for feasibility and national studies.
9. Teachers provide data for ongoing refinement of existing programmes.

**Evidence of delivering practice-based evidence**

1. ‘Behaviour for Learning’ teachers bring theory learned from training days with OTs back to their practice in the ‘Behaviour for Learning’ classrooms (NBSSb, 2015).
2. Reframing teacher attitudes and approaches to challenging behaviour following learning about sensory integration theory and adopting ‘Alert Program’ strategies (NBSSb, 2015).
3. Occupational therapists taking sensorimotor theory and their understanding of the Person-Environment-Occupation model (PEO) and applying it in the development of the Movement Matters Programme (NBSSd, 2015).
4. Teacher awareness of sensory processing and environmental factors contributes to their professional skills and practice with students with challenging behaviour (MacCobb et al, 2014).
5. Occupational therapists disseminating the knowledge generated at national and international conferences and study days (WFOT, 2014).
6. Publishing of reports and peer reviewed papers on the knowledge generated in this emerging area of practice.
Figure 44. The ever evolving cycle of practice informing scholarship and scholarship influencing practice.

6.4.2 Future directions

As described in Chapter 2, significant developments have occurred in Irish educational policy in recent years as the impact of the EPSEN Act (Education for Persons with Special Educational Needs) continues to be realized in schools. These developments will see occupational therapists working exclusively in schools as opposed to being based in community health or disability services as has been the case up to now. The first step of this process is a ‘Demonstration Project on In-school Therapy Supports’ that will run in the 2018/2019 academic year from which further learning about a more permanent therapy support structure for schools will be gleaned. Having already established a precedent for in-school occupational therapy support through the collaboration with the NBSS, the knowledge from the practice described in this study is well positioned to influence this next generation of Irish school based occupational therapists for the benefit of the students and teachers they will work with. There are a number of pertinent subjects to be discussed in relation to these developments.

6.4.2.1 Practice change

“Occupational therapists in every sector are expected to change their practice continually in response to a variety of influences, including emerging evidence; client preferences; organizational, policy, and funding changes; and technological advances” (Pollock et al., 2017, p. 243). The developments in Irish educational policy described previously pose a challenge to the occupational therapy profession in Ireland whose practice has been predominantly rooted in the health and disability sectors to date. These services are typically family centered with occasional in-school visits to support the health and/or learning needs of individual students such as specialized seating for children with physical disabilities. While this support from a community therapist is extremely valuable for the individual student receiving it, other students both with and without identified learning needs may not be benefiting from the visit. And crucially, the opportunity for the professions of teaching and occupational therapy to contribute to each other’s skill and knowledge base is missed. Pollock et al. (2017) refer to the limitations of a similar direct therapy service model involving the withdrawal of children from classrooms when describing the need for their ‘Partner for Change’ project in Canada. In setting out their vision, they describe the school community as the “client,” with the occupational therapists
using relationship building and knowledge translation to build the capacity of school staff and families to support the participation of all students at school and in the community. They view it as a population health approach, where the health and well-being of all of the children in the school is the goal.

This shift in practice is challenging, complex and time consuming for therapists (Hutton, 2012). However, providing practice development support structures under experienced leadership can enable occupational therapists to develop their practice within new services and in the context of national policy changes (Folland, 2011). These practice development support structures should involve multifaceted training, mentorship and peer support facilitated by experienced leaders in the area with the support of adequate fiscal and human resources (Pollock et al., 2017; Bucey & Provident, 2018). This is particularly relevant in light of the ‘Demonstration Project on In-school Therapy Supports’ where novice therapists will be embarking on a maiden professional development journey and experienced clinic based therapists will be challenged by a significant practice change. Interestingly, Wintle et al. (2017) suggest that adopting the role of a collaborative partner may be more difficult for occupational therapists who have extensive experience in the role of an ‘expert’ consultant, but may be easier for newer therapists. With that in mind, the next section will discuss what undergraduate training programmes should consider including in their curriculums to prepare graduate therapists for the challenges of this new practice climate.

6.4.2.2 Curriculum Considerations

The government’s commitment to developing a school based occupational therapy service within the Irish educational system is an exciting new development for the profession and an even more important development for the country’s children. Accordingly, universities should consider whether their curriculums are well placed to produce dynamic graduates who can draw upon the requisite clinical reasoning skills to practice in complex and volatile educational environments.

Elements of the undergraduate occupational therapy curriculum in Trinity College Dublin should be considered as important in the production of novice therapists who were prepared to embark on a practice development journey in an emerging context in their first professional role. The educational philosophy of the course was presented in Chapter 2 in order to highlight that students were educated within the theories and values of the profession. The four-year curriculum focused on the development of the competent practice of occupational therapy in a variety of contexts, and in a changing service delivery
arena. A variety of teaching and learning strategies are used to foster this approach, such as: peer education, problem based learning, small group teaching and experiential learning. Collective learning is also a central focus of the educational philosophy. Collaboration is supported as a method of promoting deeper learning. The influence of Dewey (1933) and Kolb (1983) theories on learning and reflection are evident with students being supported to become confident in managing discomfort as they developed personally and professionally through the variety of learning methods and assessment requirements. Some of the unique teaching/ learning methods from the Trinity Occupational Therapy Curriculum relevant to the development of emerging practice include experiential learning (Dewey, 1933; Breines, 1995), service learning (Honnet & Poulsen, 1989), peer education (Gould & Lomas, 1993; Sloane & Zimmer 1993) and learning though discussion (Rabow, Charness, Kipperman & Radcliffe-Vasile, 1994).

While the undergraduate training experience for occupational therapists should be considered important in establishing the foundational clinical reasoning skills to prepare graduates for practice in these emerging roles in schools, the subsequent professional leadership and practice development support structures should not be overlooked.
6.5 Limitations

The limitations of a study are those characteristics of design or methodology that impact or influence the interpretation of the findings of the research (Price and Murnan, 2004). Cutchin (2013) reminds us that “knowing is always provisional and propositions about distinctions and relations are best considered warranted assertions” (p. 290). Limitations relating to a mixed method study such as this must be understood in the context of the objectives set at the outset. It was never the researcher’s aim to establish objective findings that would stand the test of evidence based practice principles. However, the emphasis of evidence based practice held by the NBSS had to be respected and is also acknowledged as a relevant way of knowing by the researcher. Evidence based practice remains an important ‘way of knowing’ within the health sciences but should not be the primary influencer of policy and consequently practice. Fox (2003) recommends that ‘evidence based practice’ should be supplemented by ‘practice based evidence’. The concept of practice based evidence recognises that real world clinical practice is complicated, messy and not conducive to the controls required by the highest levels of evidence (Swisher, 2010). It respects that people are complex, and don’t readily fit the cause and effect model of science. In this study, this real world practice is documented, measured and studied to determine how practice improves occupational experiences for people such as participation in school. This study was not trying to measure the success or failure of the practice, but rather understand its roots and development.

6.5.1 Role of the Researcher in the Qualitative Aspects of the Study

Qualitative research is interpretative research, with the inquirer typically involved in a sustained and intensive experience with participants (Creswell, 2009). These relationships and experiences raises a number of strategic, ethical and personal issues into the research process (Locke et al., 2007). Creswell (2014) emphasises the importance of the researcher explicitly identifying their biases, values and personal background that may shape their interpretations formed during a study. In addition, Glesne and Peshkin (1992) refer to ‘backyard’ research which involves studying researcher’s own organisation or friends or immediate work setting. In such a case, the information may be easy to collect but may be not be accurate. The researcher must therefore take steps to ensure validity to demonstrate the accuracy of the information. There is a tone in these statements that the researcher’s influence in the generation of knowledge is a threat to a study’s rigour and relevance. However, Finlay (1998) and Dickie (2003) propose that the subjectivity of
the researcher can be exploited as a strength within a study. In this study, this subjectivity
is evident in the researcher’s adoption of ‘personal and methodological reflexivity’ as
described in the Methodology and Results chapters. In addition, the influence of the IPA
method of analysing the qualitative data outlined earlier considers the researcher’s
interpretations as a core part of the process of uncovering new understandings and
insights. Finlay (2006) contend that qualitative studies can be rigorous by showing
evidence of systematic work and relevant by the research’s contribution to the profession.

6.5.1.1 Rigour

Rigour in qualitative research is often measured by actions such as debriefing, member
checking, triangulating and consideration of concepts such as researcher bias and validity.
Some authors express scepticism regarding the value of such steps and question their
contribution to establishing the truth of findings. Dickie (2003) contends that member
checks are not relevant in all qualitative research and reminds us that there is a
“responsibility to interpret the data that ultimately rests with the researcher” (p.55). This is
particularly relevant in this study as the qualitative data relates to the reflections of the
researcher and his colleague on their practice and clinical reasoning. Out of professional
courtesy, each interview transcript and initial themes were sent to the second participating
occupational therapist soon after completion with an open invitation for commentary. None
was provided and the participant was satisfied with what was being documented.

Validity in research relates to the accuracy of what is being investigated. This criterion
rests upon the assumption that the phenomenon being investigated possesses reality in
an undisputed, objective sense (Finlay, 2006). The pragmatic paradigm does not adhere
to such a view and would contend that analysis can only be presented as a “tentative
statement opening upon a limitless field of possible interpretations” (Churchill, 2000,
p.164). Lincoln and Guba (1985) proposed that trustworthiness be a more appropriate term
for validity in qualitative research and credibility replace internal validity and transferability
replace external validity. The qualitative aspect of this study could be deemed to have a
high level of credibility (degree to which findings make sense), as the researcher is an
expert in the data as he was one of the participants. Credibility is also built through
prolonged engagement in the field. Transferability is achieved in a study through detailed
portrayal of the setting allowing the reader to judge the applicability of the findings to other
settings. This replaces random sampling and probabilistic reasoning associated with
external validity in positivist research. This study includes a chapter designated to thick
descriptions of the context and setting. Finally, the researcher’s central role as a participant
suggests bias as a factor in the findings. Frank (1997) does not consider this a flaw of research but rather considers that the “challenge is not to eliminate bias to be more neutral, but to use it as a focus for more intense insight” (p.89). It is important to state at this point that transferring a programme such as Movement Matters into similar contexts does not automatically result in comparable practice impacts and outcomes. Cutchin (2013) reminds us that scientific inquiry always occurs within a physical and cultural matrix that shapes the entire process from start to finish. Indeed, the occupational therapy programmes described in this study are the products of a unique academic-practice partnership involving individual professionals with a unique skill set, prior life experiences and professional and personal philosophies. Such programmes should be considered to be therapeutic and educational ‘tools’ which are redundant without the accompanying clinical and professional reasoning of skilled therapists and teachers.

6.5.2 Validity of the Quantitative Aspect

A research design that has validity is one that obtains accurate results, in that it accurately measures what it intends to measure (Price and Murnan, 2004). Assumptions made based on established reliability and validity (Mathai et al., 2003, Ford et al., 2009, Van Roy et al., 2008, Palmieri and Smith, 2007, Richter et al., 2011) in using the PASS and SDQ measures were that changes related to the intervention would be captured. However, the Movement Matter programme was not designed with the goal of bringing about changes that could be measured by the PASS and SDQ measures. It was not assumed that the population under study would fit within the normative data set as they were previously identified as Level 3 students with complex and well established difficulties, unlikely to be changed in a programme of 20 sessions. The statistical power with a study population of 39 is unlikely to yield statistically significant results. However, the use of the two measures allowed for a comparison to be made with a normative sample in the UK that produced an insightful profile that highlighted the participants’ challenges with learning. The results of this sample are not generalizable to the population of Level 3 students in Ireland because of the small sample size. The absence of a control group means that there is no sample who didn’t complete the Movement Matters Programme with which to compare the study sample.

As stated previously, the NBSS continue to fund and recommend occupational therapy interventions such as Movement Matters founded on practice based evidence in the form of student and teacher voice and non-standardised quantitative measures (NBSS, 2015d). It should be recognised that some service providers in other jurisdictions may insist on
evidence based practice data alone from standardised measures to support practice and secure future funding. Bonnard and Anaby (2015) recommend the following participation measures for use in the school setting.

**Table 31. Participation measures that can be used in the school setting.**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Age range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASP: Children and Adolescent Scale of Participation</td>
<td>3-22</td>
<td>Parent-report questionnaire to measure participation in school, home and community activities, with 4 point scales form extent of participation.</td>
</tr>
<tr>
<td>COPM: Canadian Occupational Performance Measure</td>
<td>8 or older: child report</td>
<td>Semi structured interview with child or caregiver/teacher to identify issues in the areas of self-care, leisure and productively with 10 point scales for client rated performance and satisfaction.</td>
</tr>
<tr>
<td>CPQ: Children Participation Questionnaire</td>
<td>4-6</td>
<td>Parent report questionnaire to measure participation in the home, school, and community with a six-point scale for diversity, intensity, independence, enjoyment and parent satisfaction.</td>
</tr>
<tr>
<td>LIFE-H: Assessment of Life Habits</td>
<td>5-13</td>
<td>Parent interview to measure the quality of participation at home, school and community with scales for accomplishment, amount of assistance and parent satisfaction.</td>
</tr>
<tr>
<td>PEM-CY: Participation and Environment Measure for Children</td>
<td>5-17</td>
<td>Parent-report questionnaire to measure participation in home, school and community environments with scales for frequency, involvement, desired change and support and barriers.</td>
</tr>
<tr>
<td>SFA: School Function Assessment</td>
<td>5-12</td>
<td>Teacher or therapist report questionnaire to measure participation, activity performance and task supports in the school environment with various rating scales.</td>
</tr>
<tr>
<td>SSI: School Setting Interview (Eglison and Hemmingsson, 2009)</td>
<td>9 and older</td>
<td>Semi-structured interview with students to identify barriers and facilitators to participation in the school environment with 4 point scales form student-environment fit.</td>
</tr>
</tbody>
</table>
Measuring participation as an outcome measure is a good fit with the aim of NBSS occupational therapy practice including the Movement Matters programme which is to improve the meaningful participation and engagement of students with SEBD in school related activities. Future studies of Movement Matters could include such measures as part of the evaluation process.

To conclude, the mixed methods approach is recognised as valuable in both evidence based practice and practice based evidence research. The cyclical model of Barkham and Mellor-Clark (2003) values mixed methods research as the products of both these evidence bases can better inform practice.
Chapter 7: Conclusion

7.1 Background

Many of the learning and behavioural challenges that students with SEBD in mainstream post primary schools in areas of social disadvantage face are rooted in the complex social and cultural environments of their homes and schools (Cooper and Jacobs, 2011). Occupational therapists working in this setting are expected to draw on existing evidence and use their clinical reasoning skills to address the physical, social and/or cultural barriers to enable students to function to the best of their abilities and thrive as human beings.

At the time of the establishment of the occupational therapy service, there was little evidence informed practice to guide a therapist working with adolescents with SEBD in mainstream post primary schools. The challenge was to apply existing knowledge from multiple disciplines to the setting, informed by ongoing evaluation and research and mediated by the clinical reasoning skills of the occupational therapists themselves and the mentoring from theory driven academics in the university.

It was this dearth of research in the area that inspired the development of new programmes for use by teachers for the benefit of students’ engagement in, and access to learning. The challenge of practice development in an emerging context is compounded by the conflict between research philosophies and paradigms that exist within professions and service providers. In the case of this study, the researcher was faced with the challenge of balancing the pragmatic philosophy of his profession with the expectations of the service provider for evidence based practice.

7.1.1 Summary of Main Findings

The study aimed to understand the process of developing practice in an emerging context for occupational therapy by focusing on a recently developed programme, ‘Movement Matters’ within the National Behaviour Support Service (NBSS), Department of Education and Skills.

The critique conducted in Objective 1, indicated that the development and implementation of the Alert and Movement Matters programmes show evidence of all the key principles of occupational therapy practice described by MacCobb (2012) in her vision for practice in the setting. Thus programme development reflects the combination of theory and practice skills unique to occupational therapy. Teaching professionals would not have generated this programme on their own, and occupational therapists could not deliver it appropriately.
in the school context. Therefore, the results indicate that occupational therapy has
delivered something worthwhile for Level 3 students, but only possible as part of a
development as a continuous process affecting the culture of practitioners that fosters
learning and brings about transformation of individual and of team practices. It is enabled
by individuals and teams who blend personal qualities and creative imagination with
practice skills and practice wisdom. This culture relates to the context of the study, had the
documentation not been available in published formats, and the time allocated to research,
this knowledge would not have been available. The focus of the leadership both in the
academic discipline and in the NBSS facilitated a research based approach to developing
practice, and the structure of the school academic year allowed for reflection, inter-
professional discussion, design and re-design of the programme as part of ongoing work
practices. Developing and publishing this work also provided evidence of practice to the
Department of Education that would ultimately inform the decision to include occupational
therapy in a recently announced In-School Therapy Project (DES, 2018) that will inform
the development of national in-school occupational therapy service in the coming years.
This is evidence of theory informing practice and consequently influencing and effecting
educational policy for students with additional educational needs.

The pre intervention PASS and SDQ data did uncover new information that provides a
valuable insight into how 39 students from an underserved population experience school.
They differ in important aspects from a large UK study in self-efficacy, self-determination
and motivation as learners. This raises issues about the appropriateness of curriculum
content and learning approaches for these students during their school lives. These
students have the same right as any student to positive learning experiences and
engagement in school life. Collaborative working with students can tell us more about how
they learn and what interests them. It is important that their positive self-reports (NBSS,
2015d) together with the results of this study reinforce an approach of targeted supports
that promote more meaningful curriculum content and approach that supports participation
by this group in their main occupation of being a student. The measuring of occupational
wellbeing is also proposed as a relevant outcome for school based occupational therapy
intervention.

The qualitative data of the therapists’ clinical reasoning gathered through interviews
demonstrates a well informed and reflective approach to practice development. The depth
and breadth of their reasoning is enlightening. With this in mind, factors related to the
quality and scope of their undergraduate programme as explained in Chapter 2 should
also be considered. In addition, the conditions and culture of employment, and facilitation by both educators and occupational therapy academic are in keeping with that referred to by Manley, McCormack & Wilson, (2008) above. The practice may not have developed without all the ingredients of the context as described.

Although not an efficacy study per se, the data indicates that the structure of the programme in using the ‘calmness scale’ was an effective method for capturing the student and teacher voice on improved self-regulation. As this is an educational programme, that the learning objectives were achieved to the satisfaction of the student and teacher should be acknowledged as evidence of efficacy, as these measures are common in the school context in health and wellness programmes. The learning activities of the programme also created a social environment which promoted the development of collaborative relationships between teachers and students, widely acknowledged as central to effective interventions with students with SEBD (Orsati and Causton-Theoharis, 2013, McCready and Soloway, 2010, Mihalas et al., 2009, MacCobb, 2012). This finding supports the use of the Movement Matters programme to develop student motivation and positive identity as part of a teacher-student co-regulated experience (McCaslin, 2009).

However, the most relevant finding for the occupational therapy profession to emerge from this data was that a new interdisciplinary scholarship of practice approach was utilised to develop practice and generate new knowledge in this emerging area. The three semi-structured group interviews report in detail, the roots of this process from the early days of practice leading to the development of the programme after a long process of interdisciplinary collaboration (Fitzgerald and MacCobb, 2017).

The opening sentence of this thesis referred to occupational therapists as ‘expert problem solvers’. On reflection, and with the help of the words of Cutchin (2013), a more realistic vision for occupational therapy interventions for students with complex learning needs such as SEBD would be to support them in being “better at living…” (p. 294). Occupational therapy can contribute to this vision through impacting on the learning environments and curriculums of school where students can autonomously develop competence in graded learning experiences through supportive peer and adult relationships (Ryan & Deci, 2000).
7.2 Recommendations

There are a number of recommendations for the occupational therapy profession to emerge from the findings of this study.

1. At the centre of this work is a collaborative approach to delivering learning opportunities that are meaningful and beneficial for school participation by the student with Level 3 needs. The NBSS model of inter-professional practice development including support structures and strategic planning has delivered positive educational developments. In advancing practice for students with complex needs, such a culture of practice development is recommended and should form future workings of the National Council for Special Education within which the NBSS has been recently integrated (DES, 2015b). Providing practice development support structures under experienced leadership is recommended to enable occupational therapists to develop their practice within services and organisations (Folland, 2011; Pollock et al. 2017; Bucey & Provident, 2018).

2. There is merit in occupational therapists adopting a scholarship of practice approach with other professions to generate knowledge for practice (Fitzgerald and MacCobb, 2017). This approach has been found to facilitate inter-professional collaboration and is a contribution to the literature on occupational therapist-teacher collaboration called for by authors such as Wintle et al., (2017). This method can be applied in the context of a three tiered model of in-school therapy support and should be part of the practice approach in the recently announced Demonstration In-School Therapy Project (DES, 2018) in which teachers, occupational therapists and speech and language therapists will be collaborating for better student outcomes.

3. Occupational therapists practicing in schools should adopt the collaborative consultative approach as described by Villeneuve (2009), Idol et al., (2000), Case-Smith and Rogers (2005) in order that the expertise of both professions is utilised to the benefit of the individuals requiring the support. The skill set required for this type of practice in an inclusive educational environment needs to be developed through on-going mentoring in the practice setting and continuing professional development at a theoretical, conceptual and practice level (Bonnard
4. The unexpected finding related to the collaborative relationship generated through co-occupation with a teacher and peer offers a methodology to directly enrich the Level 3 student’s positive relationships in school. Relationships that build self-efficacy and self-determination (Ryan & Deci, 2000) should be central to individualized supports for such students. Further professional development for both teachers and occupational therapists related to understanding attachment theory, trauma and co-regulation is recommended. Psychodynamic perspectives can then be translated into programme development providing methods of safe relationship building through shared doing.

5. Movement as a tool to support learning in every classroom experience should be promoted for students receiving Level 3 support.

6. The development of self-reflection in the manner applied in this programme, indicates that students can learn about themselves and review their behaviour. Capturing changes in self-determination, self-efficacy and motivation as a learner should be seen as important learning outcomes (Ryan & Deci, 2000). Skill development, competency and mastery experiences through carefully planned learning activities should be a focus of curriculum planning. Measurement of skill development should be personally meaningful to the learner participating in Level 3 interventions. Further research is recommended involving occupational therapist and teachers working together with the student to develop curriculum content and outcomes measurements for this learning. The ‘Occupational Wellbeing Framework’ of Doble and Caron Santha (2008) has the potential to be developed into a valid outcome measure of student wellbeing and relevant for school based occupational therapy practice.

7. Undergraduate education for occupational therapists must develop reflective practitioners capable of developing practice in emerging areas and course learning should promote this in an appropriate supportive environment. Assessment of graduate competencies in the existing professional courses
should also be examined as they relate to supporting professional practice and reflection in complex and changing working environments.

8. Further studies are needed documenting the inter-professional collaboration between occupational therapists and teachers in developing measurement tools and implementing programmes to address the complex needs of young people in the educational system in the twenty first century.

9. Occupational therapy should adopt practice based evidence as its primary method of generating knowledge for the profession. Practice based evidence is particularly relevant for the occupational therapy profession whose philosophy is firmly rooted in the uniqueness of the individual and finding individual solutions to the individual ‘problems of living’. Research approaches including the voice of the student, teacher, parent and therapist should continue to develop methodologies for measuring on experiences and outcomes related to engagement in school (Taylor & Savin-Baden, 2001).

10. Occupational therapists developing practice in emerging areas could contribute to and benefit from ‘Practice Research Networks’ (Audin et al., 2001, Borkovec et al., 2001) with academic institutions. This could promote a cycle of knowledge sharing between practice and academia. Such a partnership would require that practitioners are afforded the time within their work schedules to reflect on existing theory and evidence and document their practice for the benefit of all professions working in similar settings.
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