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**What is the impact of wellbeing on the physical activities of occupational
therapy for a child with dyspraxia?**

by

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Masters by Research

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Abstract

Structured and supervised physical activities are engaged with during a child's schooling career are included under the domain of PE (Bailey, 2005). Therefore, the investigation of occupational therapy (OT) within school was deemed an interesting approach to research the implementation of physical activities of OT. Also, as wellbeing is a key focus within schools at this time, it is important to determine what the impact of wellbeing would be on physical activities of OT. This thesis provides a historical overview of OT, physical activity, dyspraxia and wellbeing in order to explain the trajectory of what is the impact of wellbeing on physical activities of OT for a child with dyspraxia. This research involved a case study for over three school terms within a year for a child with dyspraxia. During this time, qualitative and quantitative observations were undertaken during OT sessions on Friday lunchtimes and a wellbeing questionnaire every Friday on this child. The analysis of findings demonstrated successful and unsuccessful body movements of the OT activities following the trends of wellbeing that Sue portrayed throughout the study. Findings from this study showed that despite Sue having OT intervention to aid Sue's access to everyday participation in life, her trends of wellbeing that were measured, varied in terms of positive and negative directions in accordance with what was going on in her life. As a result, other contributing factors such as parental influence and friends that affected wellbeing influenced successful and unsuccessful body movements of the physical activities of OT, making this study original and authentic, thus ensuring wellbeing is of the uppermost importance for the longevity of holistic development.

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possible without her as she was able to look after my son, so I could follow my dreams and accomplish my goals. Also, I would like to thank Shirley for my continuous motivational messages and positivity. Thank you for always believing in me. Finally, this thesis is dedicated to my son, Jack, to show him that in life, anything is possible if you work hard and put your positive mind to it. My aim in life is to work hard, for a bright future for my son, Jack and I.

Laura Power

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Chapter 1

Introduction

1.1 Researcher background

The research question – what is the impact of wellbeing on the physical activities of occupational therapy (OT)? - was decided because the researcher implements (OT) physical activity exercises with a child (Sue) with dyspraxia in school, during morning break times. The setting is a boarding school that the child attends; she boards from Monday to Friday each week and is where the researcher is employed (at the current time of writing). The purpose of the research was to develop the researcher’s OT knowledge further and to support working with Sue everyday (Monday to Friday) on a one to one basis. The researcher had a keen interest into children’s wellbeing and had always felt that conversations with the child before and after OT about the child’s life and feelings were imperative to successful OT sessions, ensuring that the child felt comfortable and happy and building a positive relationship with the child (Dunbar, 2007). Subsequently, there was an interest to construct a novel study to question the impact of a child’s wellbeing on the physical aspects of OT, an area not researched in depth within the field.

1.1.1 Myself as the researcher

Within this thesis, I will refer to myself as the researcher. I am a qualified primary teacher who has been working with special educational needs children for six years and within these years I have implemented OT programmes with children who have benefited and needed the support from the physical activities of OT. Although I am not a trained occupational therapist, I have been trained in supporting children with the physical activities of OT and have experience of writing OT reports and plans. I would receive an OT report from the occupational therapist and complete physical activities with the child with dyspraxia. I have been working with the child, “Sue”, for 18 months and had noticed how dyspraxia affects her academia and social life within school. I had noticed through prior

experience that she had talked a great deal about areas within her life that are wellbeing related.

I felt that conducting this research would pose many beneficial aspects for the school, the child and myself as a researcher. The school would gain further knowledge of OT and the facilitation of it, using expertise advice for future children who may need it, and support the development of OT in schools in general. The research child would gain more thorough and concise OT due to the research being conducted on the child, using observational techniques to support OT progression and overall wellbeing. I, as a researcher would develop a wealth of new knowledge to support professional development; demonstrate the continuity of learning; enhancement of the career path being followed; keep skills and knowledge up to date and inform current practice of effective OT strategies.

1.2 Background to the participant need for occupational therapy

For the purpose of confidentiality, I will refer to the child throughout this study as “Sue.” This research has been based on an occupational therapy assessment, (see appendix 1) implemented and followed using the initial dyspraxia assessment report, completed by an occupational therapist. The special needs co-ordinator, with permission from the parents, contacted the occupational therapist to assess Sue because it was identified within school and at home that there were many dyspraxic difficulties being presented. These difficulties that Sue experienced included: poor co-ordination; poor body awareness; lack of focus and; poor organisation skills (discussed further in chapter 3). The specific activities implemented in the exercise programme were for the inhibition of reflexes (rolling, resisted crawl, cat and head turning activities), as outlined in the report. Although the four exercises that have been mentioned are part of Sue’s OT programme, for the purpose of this study, the research has been based on the resisted crawl and cat activities to give the study a more detailed and focused outlook into what is the impact of wellbeing on these OT physical activities for Sue.

1.3 Acknowledgement to the contribution of Physical Education and Physical Activity

As this thesis will investigate the research question of: what is the impact of wellbeing on physical activities of OT for a child with dyspraxia, it is important to recognise that the focus within this thesis contributes to both Physical Education (PE) and Physical Activity (PA). Bailey (2005) recognises PE as structured and supervised physical activities that are engaged with during school hours within the school setting. This includes a wide variety of approaches within the concepts of PE and therefore the implementation of physical activities of OT poses many purposeful dispositions within this domain. Block (2016) advises that children receiving OT intervention within school are provided many advantageous benefits to PE. As a qualified primary education teacher who specialised for a time within their studies on PE, the researcher has the knowledge for adapting activities and equipment so children can participate more fully in PE classes and can aid physical activity within the school setting. As the researcher and relevant professionals are familiar with Sue's functional motor, sensory-motor and mobility needs, they can help teachers develop PE modifications, accommodations, goals and objectives that are safe and accessible for Sue, and which are aimed at improving function. Further discussions about the contribution of OT to PE and physical activity will be made in chapter 2.

1.4 Identifying the gaps in the field of research

To make this an authentic and genuine study; and to fill potential gaps in research, this research focused not only on the physical activities within OT but also on how wellbeing impacts on physical activities of OT for a child with dyspraxia; this thesis offers a novel insight into this area. As Fairbairn and Davidson (1993) implies, although both physical and OT help improve children's quality of life, there are differences. OT deals more with fine motor skills, visual-perceptual skills, cognitive skills, and sensory-processing deficits. Moreover, in light of current research, the charity 'Young Minds' (2016) highlights that there is a mental health crisis in the classroom. A majority of teachers think exam results are prioritised over the wellbeing of children. The government is being urged to tackle what has been described as a 'mental health crisis in UK classrooms'. Most parents think schools have a duty to provide support for children's mental health. Theresa May (Prime

Minister) is being urged to redress the 'fundamentally unbalanced' education system (at the time of writing). As Helliwell, et al. (2017) highlights, children's wellbeing should be considered as important as academic achievements to ensure healthy minded children, which grow into healthy minded adults. Due to this government urge to prioritise children's wellbeing in schools, it was thought that wellbeing would form a fundamental focus and how this impacts on the physical aspects of OT, providing new and detailed knowledge to the field.

It was thought that the research conducted for this thesis would fill a gap in OT and PA due to closely regarding the importance of a child's parental attachment, friendships, physical wellbeing, personal feelings and needs and how this impacts the physical aspects of OT development within school; current research does not consider these particulars. Therefore, this research would suggest that OT programmes are not merely an organisation of OT activities to be administered to support children's barriers that prevent them from doing the activities that matter to them, but also to enhance the whole person approach by highlighting significant factors that impact OT development (Mulligan, 2014).

1.4.1. Focus of the research

The researcher's experience and interest of OT and children's wellbeing, has influenced the general rationale for this research study. In doing so, the following research aim and questions were developed:

Research Aim- To investigate the impact of wellbeing on physical activities of OT for a child with dyspraxia.

Research Questions-

- 1) What is the parental influence on Sue's wellbeing?
- 2) What is the influence of friends on Sue's wellbeing?
- 3) What is the influence of future activities on Sue's wellbeing?
- 4) How does holiday/ time away from OT impact upon the performance of physical activity on Sue ?
- 5) How does wellbeing impact on Sue's physical activities of OT (resisted crawl and cat)?

1.5 Clarification of Resisted Crawl and Cat activities

As this research is formed on Sue's engagement with the OT activities of resisted crawl and cat, it is important to give clarification to the reader of what each activity is and the benefits of them. The resisted crawl and cat activities were derived from Sue showing difficulties with the symmetric tonic neck reflex (STNR), as outlined in the occupational therapy assessment report. Goddard Blythe (2007) implies that this reflex creates tension in the body when a child is sitting on a chair or on the floor with arms and legs bent. This reflex affects hand/eye co-ordination and causes problems with refocusing from far to near distance. Therefore, the resisted crawl and cat activities were suggested to inhibit the reflex and help Sue focus on near distance.

The resisted crawl activity, as highlighted by Goddard Blythe (2007) is described as 'pressing reset' on the central nervous system and revisiting the mobility patterns learned as a baby. The resisted crawl works on the following:

- Prone extension – one of the two most important movement patterns for sensory integration.
- Activating the brain stem – promoting self-regulation.
- Shoulder stability – critical for fine motor and visual motor skills.
- Hand separation – essential for fine motor development.
- Balance, core strength, and lower body proximal stability.
- Promoting bilateral integration.
- Facilitating body awareness and motor planning.
- Providing proprioception input – which is calming and organizing for the brain.
- Promoting weight bearing on the joints
- Facilitating motor development □ Normalising muscle tone.

Consequently, the resisted crawl activity poses many advantageous benefits to Sue's OT progression.

The cat activity, as highlighted by Cheatum and Hammond (2000) helps to increase flexibility in the lower back and core muscles. It brings flexibility to the spine, strengthens wrists and shoulders, tones the abdomen, relaxes the mind and improves blood circulation. For these reasons, the cat activity poses many advantageous benefits to Sue's OT progression.

Chapter 2

Literature Review

2.1 Introduction

The purpose of this literature review is to outline, review and critique the subject areas relevant to the main research question of: What is the impact of wellbeing on physical activities of occupational therapy (OT) for a child with dyspraxia? The investigation of existing literature reveals a significant gap of research related to children's wellbeing connection to physical activities of OT implemented within a primary school. This chapter focuses on the key areas of OT, in particular how OT can support help and work with a child with dyspraxia. It considers how OT contributes to PE, and examines why the physical activities within OT are important. It outlines what an OT report is and how these are used within a setting, as in Sue's primary school. It reviews wellbeing, self-esteem and selfconfidence and how these are reported within a scale as in Sue's primary school setting. It scrutinises the links between wellbeing and OT and also, how OT affects a child's selfesteem, self-confidence and wellbeing. The review concludes by considering the link between wellbeing and children who have dyspraxia.

2.2 Occupational Therapy

Mulligan (2014), emphasises that occupational therapy (OT) is a health and social care profession, regulated by the Health and Care Professions Council. According to Dunbar (2007), OT takes a whole-person approach to both mental and physical health and wellbeing, enabling individuals to achieve their full potential. Hutton (2009) conducted a qualitative study with the aim of increasing the knowledge and skills of teachers and teaching assistants in the engagement and participation of children in a range of schoolbased occupations. Interviews with the teaching team explored the impact on the knowledge and skills of the school staff and the quality of the children's school experience. The positive response of the schools has led to the development of a bank of occupational therapy resources for primary schools. She found that OT provides practical support to

enable children to facilitate recovery and overcome any barriers that prevent them from doing the activities that matter to them. This helps to increase children's independence and satisfaction in all aspects of life.

The Department of Health Government (2004) implies that 'occupation' of "occupational therapy" refers to practical and purposeful activities that allow people to live independently and have a sense of identity. This could be essential day-to-day tasks such as self-care, work, academia or leisure. This definition shows the extent to which OT reaches and that it is beyond just a person's occupation, as in a job. This would explain why occupational therapists work with adults and children of all ages and with a wide range of conditions. Dunbar (2007) reports that the most common conditions are those who have difficulties due to a mental health illness, physical or learning disabilities. Morgan and Long (2012) extends Dunbar's (2007) explanation of occupational therapists and shares that they can be found working in a variety of settings including health organisations, social care services, housing, education, occupational health, and voluntary organisations or as independent practitioners. This research was derived from their qualitative study, regarding the effectiveness of motor interventions for children with developmental coordination disorder (DCD). Six databases were investigated for qualitative studies, conducted with school-age children with DCD and their parents to understand better which OT interventions are most effective for improving outcomes from an occupational therapist. They found that, for many families, an intervention that addressed everyday occupations and the social consequences for children with DCD was of the utmost importance. Most parents' greatest hope for intervention was to maximise their child's social participation and motivation.

Mulligan (2014) reports that OT is within the specialised education services and within a school setting offering help and assistance to children in a number of ways. As Wright and Sugarman (2009) highlights, a child's occupational performance, maybe impaired by physical, developmental, sensory, attentional and/or learning challenges. Mulligan (2014) implies that the aim of OT within the school is to improve children's performance of tasks and activities, which is important for successful school functioning. Dewey and Wilson (2001) highlights that the occupational therapist is concerned with ensuring an understanding of and matches between children's skills and abilities and the overall

expectations of the child in the school setting. The American Occupational Therapy Association (AOTA) (2008) base their findings on systematic reviews and topic-specific Practice Guidelines that define the OT domain, process, and interventions that occur within the boundaries of acceptable practice. Their research implies that recommendations of task adaptations, task modifications and assistive strategies (for example, mechanical lift, writing aid, and exercise) may be necessary to optimise a child's performance in the school setting. Fairbairn and Davidson (1993) conducted a quantitative study into teacher's expectations from occupational therapists working with children in two public schools in Canada. Information was obtained through a questionnaire distributed to all teachers who had worked with occupational therapists. They found that direct intervention to improve, restore, maintain or prevent deterioration in the skills required for functioning in the school environment is often necessary; for example, therapy to develop the motor coordination, visual-motor coordination and/or visual perceptual skills supporting school performance and attainment.

2.3 Dyspraxia

Simmons (2015) implies that dyspraxia is a developmental disorder, which is neurologically based. It can be seen in the physical difficulties that children have. Wilson et al. (2009) highlights that although the exact causes of dyspraxia are unknown, it is thought to be caused by a disruption in the way messages from the brain are transmitted to the body. This affects a person's ability to perform movements in a smooth, coordinated way. Additionally, the Dyspraxia Foundation (1999) emphasises that dyspraxia is an impairment in the organization of movement which leads to associated problems with language, perception, and thought. As Lee (2004) highlights, the impact on language is that for some children, the main struggles are in making and co-ordinating the precise movements, which are used in the production of spoken language. As a result, severe and persisting speech production issues arise. This may occur in isolation or in combination with general motor difficulties. The impact on perception and thought for some children, is that they tend to have poor understanding of the messages that their senses convey and difficulty relating those messages to actions. Difficulties may become apparent in planning and organising. Subsequently, the researcher questioned that these associated problems may contribute

to a negative impact on Sue's wellbeing, which in turn may have a negative result to the success of the physical activities of OT.

Kirby and Drew (2003) highlights that people with dyspraxia will have a poor understanding of the messages that their senses convey and will have trouble in relating those messages to appropriate actions. Kirby (2006) reports, that physical activities are hard to learn and hard to remember. Therefore, implementing OT activities with Sue between a Monday and Friday during morning break times in term time supports Sue's memory functioning due to the consistency of the physical activities of OT. Patrick (2015) advised that frustratingly, this condition cannot make people's bodies do what they want to do quickly enough. Simmons (2015) emphasises that although actions can be carried out, they are not instinctive and connections appear to be either missing or disrupted. Importantly, dyspraxia may affect any or all areas of development (sensory, physical, intellectual, emotional, social, linguistic) and hinder the efficiency in delivering and receiving messages within in the connections in the brain. Therefore, every person with dyspraxia is different as a result.

Macintyre and Deponio (2003) warned that because of the lack of visibility of dyspraxia, some people appear dismissive or highly critical of dyspraxia, finding it hard to believe that it is a genuine disability and deemed an excuse to explain away under-achievement. This could lead to stereotyping or labelling a child from an early age such as a 'clumsy-child.' Ripley (2001) also recommends also speech therapy, as some children with dyspraxia have trouble learning the English language and some may experience handwriting troubles. Patrick (2015) adds that some children with dyspraxia are fairly academic and studious, which makes it less apparent to suspect a child with a learning disability. Kirby (2006) proposed that no cures had been found for dyspraxia, therefore the condition has to be dealt with and managed, such through as OT in schools, assuming it is approached with awareness and sympathy. Therefore, early intervention, if possible, will increase children's participation in everyday life and increase full potential for adult independence (Wilson et al., 2009). Highlighting how important OT within a primary school setting is for children with dyspraxia, thus ensuring that Sue has the opportunity to fulfil her everyday needs, from the OT intervention.

The Department for Education and Department of Health (DfE and DoH) (2015), states that children have special educational needs if they have a learning difficulty; which calls for special educational provision to be made for them. As a result of the Equality Act (2010), schools are required to make reasonable adjustments to help any children with a disability.

In many schools, this is providing OT for children or providing equipment and resources that would help children within a class and around a school. The National Health Service (NHS) (2016) estimates about 3 percent of people in the United Kingdom have dyspraxia, and many of those are undiagnosed, meaning there are potentially many children requiring this assistance, but who will never get it (Coulter et al., 2015). This research study may support and raise the awareness of the importance of OT interventions within schools for the future and ensure that children do not 'slip through the net' (Morton, 2004) and most importantly, do not carry with them insecurities, lack of self-esteem and confidence into adulthood (Patrick, 2015).

Coulter et al. (2015) suggests that when a child is diagnosed with dyspraxia, they should be assessed by an educational psychologist with a view to having an education and health care plan drawn up with an individual education plan (IEP) put in place. The DfE and DoH (2015) implies that once it has been decided that a child has special educational needs, a graduated approach should begin. This is a four-step process that provides intervention, recognises the variety of special educational needs and that, where necessary uses specialist expertise to support children who present difficulties. Within the graduated approach, the four-step process ensured that Sue's school should:

- Assess- this was carried out using a clear analysis of Sue's needs, assessment, and experiences of Sue and progress attainment. Furthermore, ensuring the views of external services (occupational therapist), parents and Sue were considered to support the assessment process.
- Plan- parents, teachers, support staff (researcher) who work with Sue should be aware of Sue's needs, outcomes set, the support provided and any teaching strategies and approaches (as seen in appendix 1- OT report), which are all recorded and monitored on a regular basis.

- Do- all staff to work closely together to ensure the support is provided and monitored effectively.
- Review- regular reviews take place between all relevant staff and parents.
Having a graduated approach in place, can then show Sue's true academic abilities to enhance any opportunities for future goals and possibly obtain funding for any equipment or support to aid holistic development, overall.

2.4 How occupational therapy works with a child with dyspraxia

Case-Smith and O'Brien (2010), states that occupational therapists work with children with dyspraxia by concentrating on the 'praxis' from dyspraxia (p.24). To define this more clearly, 'praxis' is a Greek word which is used to describe the learned ability to plan and to carry out sequences of coordinated movements in order to achieve an objective (Losse, et al. 1991). 'Dys' is the Greek prefix meaning 'bad', so dyspraxia quite literally means bad praxis (Ripley et al., 2016). Moreover, as Jenkinson et al. (2008) suggests, the occupational therapist will work with children to enhance the ability to interact successfully within the physical environment, to plan, organise and carry out a sequence of unfamiliar actions and to do what the children needs and wants to do.

Loose et al. (1991) recommends, that the occupational therapist address the characteristics of a child with dyspraxia by observing:

- play – this looks at developmental and educational characteristics,
- clumsiness – this looks at difficulty transitioning from one body position to another, □
poor tactile discrimination – this looks at difficulty with feeling or localising a touch stimulus,
- inadequate body schemes – this looks at difficulty relating their bodies to physical objects in environmental spaces,
- difficulty imitating actions of others – this looks at direction of movement may be disturbed and
- difficulty with sequencing and timing – this looks at the actions involved in a motor task.

Sparkes (2002) highlights a similar list of problems that are evident in gross motor skills, sports, problems in constructive or manipulative play and poor fine motor abilities. Brooks (2013) interestingly adds that the behavioural characteristics requires attention too, and

are important to consider (as in this research) as a child maybe showing signs of low self-esteem and poor self-concept, become easily frustrated, avoid new situations, maybe become manipulative, may prefer 'talking' to 'doing', may often be late and forgetful and may have a disorganised approach to tasks. Addy (2013) emphasises that whatever characteristics are causing a concern to a child's right to participate to life; an occupational therapist should put in a strategic plan to support the child holistically, as will be discussed further (see 2.6).

Within the research study, 'consultation approach' was adopted. Portwood (1996) clarifies that this approach, is where the occupational therapist helps family members, teachers and others who deal with a child to understand the nature of the problem. He/she will provide information and develop strategies through collaboration with them. Stephenson (2004) adds that these strategies can be implemented in the home or/and a school setting. This approach will give the utmost treatment to Sue. For the research study, an assessment was completed by an occupational therapist (see appendix 1) with advice and recommendations for the parents and school, enabling the researcher to implement the appropriate exercises as suggested through a 'sensorimotor approach.' Kirby (2006) recommends that the sensorimotor approach emphasises active, experience-based learning.

Piaget (1936) supports this "sensori-motor" learning based on his theories on the assumption that children learn about their bodies and their environment through experience (Jenkinson et al., 2008). Piaget (1957) views the child as actively constructing knowledge and cognitive development as taking place in stages. Wadsworth (2004) implies that according to his influential constructivist theory, Piaget proclaimed that children pass through four distinct stages of development, including the sensorimotor stage, preoperational stage, concrete operational stage and formal operational stage. Daniels and Shumow (2003) identified empirical research that supported a framework for explaining how teachers' perspectives and knowledge about child development contribute to classroom practices. This also considers the implications of that framework for teacher education and for research on teacher education. They emphasised that Piaget believed that reasoning deepens in children as they grow, engagement in the physical and social world enhances development, and conceptual change occurs through assimilation

(adaptation process) and accommodation (altering one's existing schemas, or ideas, as a result of new information or new experiences). As a result, this encouraged the researcher to adopt the 'sensorimotor approach' recommended by the therapist to emphasise active, experience-based learning.

Kielhofner (2009) implies a 'sensorimotor approach' can also include more structured activities such as exercises used in a group or individually. These could include stretching and balancing exercises. This enriched the work between the researcher and Sue on a daily basis, engaging with the physical activities of OT (cat and resisted crawl). This was to support Sue to function successfully within academia and overall school life. Kuhaneck et al. (2010) adds that these OT activities pose huge significance on a child's overall holistic development by improving physical functioning and core strength. Kirby (2006) clarifies that these activities are important to develop core strength and stability. Having good core strength can help children sit well at a desk, and helps provide a stable base for gross and fine motor tasks. The AOTA (2008) emphasises that children who do not have much core strength often move around frequently. They find it hard to hold their body in a stable position so that they can concentrate and learn. Chisholm et al., (2004) implies that children with poor core strength are often described as active children with dreadful handwriting, short attention spans and 'sloppy' postures. Kuhaneck et al. (2010) emphasises that this is because their muscles are not strong enough to 'hold' in one position for long and therefore 'fidget' around in an effort to get comfortable. Therefore, as the AOTA (2008) reports, children may get distracted and find it difficult to finish a task. Consequently, as Ripley et al. (2016) recommends, the OT physical activities that are implemented within the school, support Sue to feel 'centred' this engages Sue's body and calms her mind, thus enhancing concentration skills to improve overall functioning.

2.5 The contribution of occupational therapy to PE

As this study is focusing on the physical activities of OT, it is important to acknowledge how OT aids PE within schools. The Department for Education (DfE, 2013) recommends that PE should inspire all children to succeed and flourish in competitive sport and physical activities. It should provide opportunities for children to become physically confident in a way, which supports their health and fitness. Within the National Curriculum for PE (DfE,

2013) children should strive towards being physically active for sustained periods, develop competency to excel in a range of physical activities and endeavour to be continually active and lead healthy lives. As Harold et al. (2013) recommends, the development of fundamental movement skills in children's PE needs to be nurtured. It is clear that these skills are important for Sue's physical development, long-term health, and wellbeing.

Fairbairn and Davidson (1993) state that although both PE and OT help improve children's quality of life, there are differences. OT emphasises on children's play and learning, school performance, daily activities and compare with what is developmentally appropriate for that age group, in particular with children with specified special educational needs. According to the AOTA (2008), in addition to dealing with children's physical wellbeing, OT addresses psychological, social, and environmental factors that can affect functioning in different ways. This approach makes OT a vital part of health care for some children. Moreover, as OT has a more detailed focus on skills such as: fine motor skills, visualperceptual skills, cognitive skills, sensory-processing deficits, attention and, body awareness, this therapy offers many positive aspects to PE, especially enhancing holistic, individual needs, posing much precision to detail to the body (Block, 2000). Block more recently (2016) found that children receiving OT intervention within school gain many advantageous benefits to PE.

2.6 The occupational therapy report

As previously discussed, this research has been based on an OT assessment that implemented and followed the initial dyspraxia assessment report (see appendix 1). The Special Needs Co-ordinator, with permission from the parents, contacted the occupational therapist to assess Sue because it was identified within the school and at home that there were many dyspraxic difficulties being presented, including, poor co-ordination, and body awareness, lack of focus, and poor organisation skills.

Using the focus of the report, the researcher completed the OT activities with Sue every morning at break time, Monday to Friday, to implement the exercise programme for the inhibition of reflexes as outlined in the report. As Goddard Blythe (2005) highlights, in order to inhibit reflexes, it is possible to replicate specific stages of development through

the repetition of movement patterns based upon early development. This gives the brain another chance to pass through the stages which were absent or incomplete in the first year of life and establishes neural connections. As a result, the cat and resisted crawl activities were used to inhibit Sue's reflexes. In line with the report, improvements were recorded and reported back to the occupational therapist when there are review meetings. As suggested by Townsend and Polatajko (2013), completion of an occupational therapy assessment report involves a comprehensive and consistent process, whether it is condensed into one visit or continued over several. The College of Occupational Therapist of Ontario (2012) states they are based on core occupational therapy principles and these standards and guidelines are also applied according to the type of needs of the individual child, as outlined in the assessment report. Summarising the individual needs of Sue from the report, it was apparent that Sue's retained infantile reflexes were to be worked on, as these posed to be very significant needs. These retained infantile reflexes will be discussed further in the next section.

2.7 Infantile/postural reflexes

The resisted crawl and cat activities were derived from Sue showing difficulties with the symmetric tonic neck reflex (STNR), as outlined in the occupational therapy assessment report (see appendix 1). Goddard Blythe (2007) implies this is one of the most prevalent reflexes in children with learning disabilities, as many as 75% of these children have a retained (STNR). This reflex creates tension in the body when a child is sitting on a chair or on the floor with arms and legs bent. In addition, as Brandes (2016) highlights, poor concentration sometimes leads to fidgeting on chairs, especially when the chair is pressing against the child's back. This can be distracting and even painful for the child, which could cause children to be disruptive in classroom situations. This reflex affects hand/eye coordination and causes problems with refocusing from far to near distance. This can have implications for reading, handwriting, and mathematics, due to the lack of concentration and the ability to stay focused and still. As Case-Smith and O'Brien (2010) implies, children's academic performances are affected, lowering children's self-esteem and self-efficacy due to the inability to succeed to full potential. Their research is a contributing factor as to why Sue's wellbeing was monitored in this study, in order to determine what is

the impact of wellbeing on the physical activities of OT and how Sue's self-esteem and self-efficacy were affected.

As Cheatum and Hammond (2000) highlights, the resisted crawl and cat activities were suggested to inhibit the reflex, which then endeavours to support the body in the longevity of Sue's schooling career, improve overall wellbeing and any emotional behaviours on the body. As Brandes (2016) suggests, this reflex allows a baby to straighten its arms and bend its legs when it looks up. The STNR reflex is present in normal development for a relatively short time span and is normally lost at 8 months after birth. If it is not lost, it can affect a child's ability to crawl on their hands and knees. As Case-Smith and O'Brien (2010) highlights, crawling is a major developmental milestone. As a baby crawls, as well as looking ahead, babies learn hand-eye coordination from the movement of the hands. This ability is essential for a child to be able to read without losing the words at the middle of the line and to visually follow the moving hand when writing. The focusing distance and hand-eye coordination skills used in the act of crawling are at the same distance that the child will eventually use when reading and writing. As a result, Cheatum and Hammond (2000) recommends that the cat and resisted crawl be used to stimulate the movements of crawling and to lay down the neural pathways that will enable children like Sue to overcome the retained reflex. Consequently, as Goddard Blythe (2005) emphasises, engaging with these activities, the body will reduce mental tension, as the relaxed body will, in turn, send signals of calm and control to the brain, suppressing stress levels for Sue and supporting emotional development.

Dunn (1997) reviewed constructs from neuroscience and behavioural science to describe how a child's reflexes, when retained, affects a child's functional performance in everyday life. She reviewed data from a family-report measure of a child's responses to sensory experiences during daily life and data from a quantitative study in young children with and without disabilities, focussing on their reflexes. She highlighted that infantile reflexes are developed in the pre and neo-natal baby. These reflexes are essential for child development, as they are the segments for the development of the postural reflexes, gross motor and fine motor skills. When these reflexes are retained, developmental delay may occur and can contribute to issues such as coordination, balance, sensory perceptions, fine motor skills, sleep, immunity, energy levels, impulse control, concentration and all levels of

social, emotional, and intellectual learning. As Sue's were retained at approximately 50 percent, these would be contributing quite significantly to Sue's difficulties and therefore the programme of exercise that has been discussed will help mature and then suppress each reflex. Sue's gross and fine motor skills were affected as Sue was observed to fiddle with things, bump into things and become easily distracted. The lack of concentration and the ability to sit well were contributing factors too. Sue's co-ordination and body awareness were disorganised and this hindered her participation in PE lessons. Sue struggled to apply learnt skills in a group when the environment was constantly changing and it was very difficult to plan movements, whilst at the same time responding to the ever-changing environment with lots of distractions. Finally, to improve responses to stimuli (aural, visual and physical), sensory integration work was recommended to be applied. Therefore, the occupational therapist designed the exercise programme tailored to meet these needs and to enhance Sue's holistic development, as recommended by Addy, (2013). Moreover, as Sugden (2007) suggests, ensuring that exercises are implemented, supports Sue with academia when back in the classroom.

2.8 Wellbeing, self-esteem and self-confidence

Gray et al. (2011) emphasises that 'wellbeing' is diversely used and conceptualised in slightly different ways in different disciplinary areas and can be defined, as 'it's a hearts and minds thing' (p.2). Diener et al. (1999) reviewed modern theories of subjective wellbeing that stress dispositional influences, adaptations, goals and coping strategies. They highlighted that sociological approaches tend to be structural and objective, and psychological ones more based on subjective reports of personal feelings and emotions. Rees et al. (2010) suggests that wellbeing is often used interchangeably with other terms such as 'happiness', 'flourishing', 'enjoying a good life' and 'life satisfaction', and these all convey different underlying meanings and emphases. Thus, for the relevance and significance of this study, it was determined that self-esteem and confidence would be embedded into the term 'wellbeing' as important factors, as will be discussed further. In addition, Huppert and Johnson (2010) proposes that studies into adult wellbeing, while themselves relatively new, cannot be applied uncritically to children and young people because of economic and governance factors that adults are accustomed to. Ryan and

Deci (2010) emphasises that without a commonly agreed definition of wellbeing, it is therefore unsurprising that there is also a lack of agreement as to how to assess it, hence different studies have tended to measure wellbeing in different ways, summarising different variables. Consequently, the adaptation of 'The Warwick-Edinburgh Mental wellbeing Scale'(2007) that was used for this study, was sought to be an effective means to quantitatively assess Sue's wellbeing with the use of the 'Likert scale' due to the scale being child friendly and implemented in a short space of time, once a week on a Friday. Therefore, this gave the study originality and authenticity, valuing the interpretivist epistemology to the research data collection methods. It became a very key measure of finding out whether Sue was experiencing a good quality of life as a subjective opinion (Neuman, 2000).

Furthermore, as discussed in the World Happiness report (2015), addressing the need to measure wellbeing in schools should be of the uppermost priority- worldwide. Huppert and Johnson (2010) recommends, if schools are not measuring the wellbeing of their children, but measuring their intellectual development, the latter will always take precedence. This is the core crux to the study to enlighten the need that wellbeing, especially through positivity and good feelings, are paramount before any child can learn to their full potential (Scoffham and Barnes, 2011). The researcher questioned what the impact of wellbeing would be on Sue's physical activities of OT, would a positive wellbeing result in a focus and positive result in the successfulness of the physical activities? Helliwell et al. (2017) highlights that when children are happy and fulfilled, learning and intellect will be enhanced. Bonell, et al. (2013) suggests that a child's confidence is accelerated when adults place their trust and belief in a child. A child will then mirror internally those beliefs. Dobson (2015) adds that Sue may develop her own self-confidence, ensuring the faith, belief and, trust of adults around her are imperative. As Gilbourne and Anderson (2011) implies, a self-confident child is more likely to be optimistic and motivated and have a 'can do' rather than a 'can't do' attitude to learning and education. Furthermore, the results may pose some answers to the reasons why children have been unsuccessful in exams and tests (Hart, et al., 2007).

As Rees et al (2010) outlines in 'The Good Childhood Report,' children need to have the opportunities to learn, grow, flourish and develop. Their research revealed that half a

million children across the UK are unhappy with their lives. The report outlines key priorities needed for a happy childhood, after interviewing more than 30,000 children aged 8 to 16. Children who have low levels of happiness are much less likely to enjoy being at home with their family and feel safe when with their friends. This research supports this study's aim to support Sue's mental health through the physical activities of OT to enhance her happiness and enjoyment with life to full potential. Thoillez (2011) implies that full potential includes cognitive and emotional development by ensuring access to play in the early years, receiving high quality education in school, and progressing in physical development, for example. Gray et al. (2011) emphasises that school is a key area of children's lives where experiences vary greatly and negative experiences have a significant impact on wellbeing. Fundamentally, ensuring a child's self-esteem and confidence needs are paramount when evaluating a child holistically.

Within the literature, the phrases that are used for wellbeing are also commonly found within self-esteem and self-confidence literature. Ben-Shahar (2007) implies that self-esteem is defined as describing a person's overall sense of self-worth or personal value and is often seen as a personality trait, which means that it tends to be stable and enduring. Thoillez (2011) highlights, that self-esteem can involve a variety of beliefs about the self, such as the feeling of one's own appearance, beliefs, emotions, and behaviours. Invariably, Rees et al (2010) advises that when children feel confident about themselves and their abilities, they have good self-esteem. Children who feel like they are distanced from their families, not liked by their peer groups or who tend to believe their efforts will lead to failure, have poor self-esteem. Self-esteem is one measure of a child's overall mental health (Scoffham and Barnes, 2011).

Gilbourne and Anderson (2011), imply that self-confidence is commonly defined as the sureness of feeling that one is equal to the task at hand. This sureness is characterised by belief and poise in ability. As Dobson (2015) suggests, a child's confidence is accelerated when parents or adults place their trust and belief in a child. A child will then mirror internally those beliefs. The child develops his or her own self-confidence, ensuring faith, belief and trust are imperative. Bonell et al. (2013), highlights that self-confidence enhances opportunities and encourages children to take risks, express their creativity in classroom work and invest in the work they produce at school. Gilbourne and Andersen

(2011) highlights that a self-confident child or adult is more likely to be optimistic and motivated and have a 'can do' rather than a 'can't do' attitude to learning and education. Rather than a lack of self-confidence, as suggested by Branden (2011) can affect the confidence and motivation necessary for problem solving and dampen interest in new experiences. Besides, having the guidance from teachers and parents, children can develop a flair for their own capabilities. If children trust their own judgment, they are more likely to go on to learn and expand their knowledge in the future (Department of Education, 2009).

2.9 Wellbeing and Occupational Therapy

Mayers (1995) conducted empirical research to gain an understanding of what is meant by the term 'quality of life' and how it is measured or assessed. The research suggested that discussions with adults and children about their individual quality of life and what this means to them are probably more realistic than trying to measure aspects of it. He found that throughout the implementation of OT, it is imperative to preserve children's and adult's individuality, self-respect, dignity, privacy, autonomy, and integrity. As discussed, the implementation of the OT programme documents specific criteria, for example during 'cat', (see appendix 2) 'can Sue keep her head down whilst maintaining stillness for five seconds'. As Mulligan (2014) suggests, this is tracking any progression and inevitably aiming to achieve fully life changing goals. Therefore, as the College of Occupational Therapists (COT) (2004) proposes, it is paramount for the facilitator of OT to portray high standards in relation to attitude, communication, and actions towards children, enabling them to maintain their self-esteem, validity and control over their own lives. Similarly as Schmid (2005) advises, if children have learning, emotional and psychological issues, in addition to their physical difficulties, this can hinder their ability to grow, learn, socialise and play, resulting in them not coping with basic activities such as dressing and organisational skills. Langford et al. (2014) adds that, particularly, at school, children may have difficulty concentrating in class or lack the confidence to take part in playground games such as playing catch. As Csikszentmihalyi (2002) emphasises, the difficulty concentrating in class or the lack of confidence to take part in playground games such as playing catch, will affect their ability to learn, participate in school activities and make

friends, which can be difficult, because 'fitting in' is so important to a child's self-esteem and happiness. It is important to emphasise enhancement of the competencies of Sue rather than highlighting areas of malfunction throughout the therapy (Christiansen and Baum, 1992). As the Department of Health (2010) implies, using copious amounts of positive praise and encouraging Sue to have a positive outlook on life and adopt optimism will be effective for personal growth. Pelligrini (2015) (an educational psychologist), who worked on the role of play in human development, highlights that OT acknowledges the dynamic interaction of the mind, body, and spirit, encompasses the values of the individual and recognises the need for self-esteem and affirmation. Frolek and Chandler (2014) emphasises that without some sense of self-worth and spirituality, there is a lack of the 'meaning of life', which could make Sue feel powerless and solitary. Consequently at the start of every session, the researcher, initially, always sought to see how Sue was feeling and endeavoured to engage in positive dialogue and ensured body language and mannerisms were conducted in a warm and calm manner. Woodman et al. (2010) highlights that building positive relationships between the child and the therapist,, creates supportive and nurturing experiences, which would allow Sue to feel at ease and give the confidence to flourish and enhance feelings of wellbeing throughout the physical aspects of OT. Additionally, as Frolek and Chandler (2014) suggests, the sense of security that Sue receives can ensure Sue to feel worthy and aim to achieve her full, physical potential. As a result, the researcher adopted an open-minded approach without any prejudice and negative viewpoints to encourage optimal results.

The COT (2006) highlights that as OT supports individuals to participate, holistically, in everyday life, some vital ingredients that contribute to a sense of wellbeing from the engagement with OT can be enriched within the 'six c's.' The COT (2006) suggests that these six 'c's' are:

- contribution- a sense of being able to give to others,
- comfort with a change in life- self-regard, acceptance, and changeability,
- contact and companionships- involvement with others, social networks and empathy,
- choice- having a sense of empowerment,
- competency- ability to cope and carry out activities proficiently
- and commitment- the direction in life, sense of belonging and purpose.

Neuhaus (1997) recommends that the philosophical approach from the 'six c's' (COT, 2006) enables individuals to have a sense of coherence and balance, thus the therapy received will inevitably become an affirmative, transformative experience. Pelligrini (2015) emphasises that adopting these aspects of OT will inevitably enhance Sue's holistic development so that she can feel empowered and confident to tackle any challenges that may arise within the school and in the wider community.

2.10 How occupational therapy affects a child's self-esteem and confidence

Stead and Neville (2010) proposes that OT supports the social and psychological development of the child, alongside the physical benefits. Bryant et al (2014) suggests that promoting a child's self-esteem and confidence is a key component of OT treatment; this is important in maximising Sue's ability to be a happy, independent, social and functional individual.

Pelligrini (2015) highlights that when using OT to its full potential within the school setting, a variety of approaches to improve confidence are sought; an example would be by using an activity that increases Sue's awareness of the things that she is good at, rather than focussing on things that she can not do. This was implemented within the OT sessions by starting with the activity that Sue enjoys the most and feels most competent at, such as the cat activity. Sue enjoyed pretending to be a cat, which enhanced her competency with this as she became more confident with practising the exercise. As Case-Smith and O'Brien (2010) highlights, what we do influences how we feel. Csikszentmihalyi (2002) created the term 'flow' to refer to the optimal experience of losing oneself in an extremely rewarding activity. A child is most likely to experience flow when the activity provides the ideal match of challenge and skill. Although this optimal experience may only occur occasionally, a child can improve their mood by increasing their participation in activities with a high or moderate challenge, consistent with the child's skill level. Moreover, as Pelligrini (2015) highlights, it is imperative to have a good relationship between the researcher and Sue to ensure that Sue is enjoying the cat and resisted crawl activities as well as gaining the physical benefits from them.

As Langford et al. (2014) suggest, low confidence (lack of trust in oneself) can be a result of many factors; children who have a disability, which affect their performance in daily life, are more likely to have low confidence. This strengthens the reason as to why Sue's wellbeing should be assessed and to seek if any strategies need to be put in place to ensure healthy-mindedness. Patrick (2015) emphasises that confidence is an important aspect of childhood; a more confident child is more likely to partake in activities that are new or seem daunting to them. Therefore, as Seligman (2002) recommends, positive praise and encouragement and the promotion of self-efficacy, are a variety of approaches that are used to improve the confidence in a child. In addition, as Pelligrini (2015) highlights, participating in the physical aspects of OT will indeed produce increased levels of endorphins and serotonin (happy hormones) which improves moods and energy levels, thus having an impact on happiness. Bloch (2015) implies that this may result in children gaining more confidence and enhancement of self-esteem in their everyday lives. As the physical aspects of OT are engaged with five times a week, Bazyk (2011) work suggests that Sue should increase her contentment and life satisfaction effectively, due to the continuous engagement of the occupational therapy activities.

2.11 Wellbeing and Physiological responses

Brown and Stoffel (2011) defines physiology as being in accord with or characteristics of the normal functioning of the body. In relation to this study, physiological aspects need to be addressed on the wellbeing scale through statements such as: 'I've been feeling useful' and 'I've had lots of energy,' to assess Sue's overall wellbeing. These can therefore be linked to emotional behaviour that involves the body. For that reason, as Allender et al. (2006) suggests physical activity can help promote mental fitness.

Sue attends a boarding school (Monday to Friday) and has holiday periods. Upon the return to school, Golding (2015) suggests that children may experience decreases in their physical capabilities and energy levels which can be attributed to busy and hectic schedules when outside of school. As Addy (2013) emphasises, this can deter motivation, make children tired, reduce concentration and hinder the ability to participate with OT effectively. Bruni (2010) recommends, that when children are tired they are more susceptible to mental exhaustion, lower morale and mood. Moreover, not only does lack of sleep and tiredness

affect mood, but mood and mental states can also affect sleep. Anxiety increases agitation and arousal, which make it hard to sleep, enhancing these emotional behaviours on the body. Skinner and Zimmer-Gembeck (2016) proposes that children who are involved in hectic and busy schedules every day can experience weakness, lack of motivation and start to develop mood swings. Parents need to moderate children's activities during non-school times and make sure that their children are not 'burning out,' which may have detrimental effects on children's confidence and self-esteem. Miller and Zittleman (2010) state that extra activities outside of the school day do enhance children's holistic development, however, children need a balance between mental and physical activity with the ability to practise mindfulness and to appreciate calm and quiet times, which aid concentration, memory functioning and overall academia. Skinner, et al. (2016) explains that children need periods throughout the day to reconnect with themselves and develop a sense of wellness and calmness; this would enhance future participation and reenergise Sue to support future successes. Maitland (2014) adds that children having alone time gives children the ability to self-preserve and protect oneself when wellbeing is low.

2.12 Wellbeing and Psychological responses

Allender et al. (2006) suggests, psychology is the scientific study of how people behave, think and feel (mental and emotional state of a person). As this study has outlined, there are many psychological aspects linked to OT and wellbeing. It is important to outline the cognitive psychological characteristics (the mental processes such as, attention, language use, memory, perception, problem solving, creativity, and thinking) (Allender et al., 2006) that are stated within the wellbeing scale. As Goleman (1998) emphasises, 'I've been thinking clearly' and 'I've been interested in new things,' describes a child's capacity to acquire and use information in order to adapt one's thoughts to the environmental demands, thus promoting the cognitive processes to improve one's mental health and wellbeing. Westby and Robinson (2014) conducted scientific research into a developmental perspective promoting the 'theory of mind.' They collected data from clinicians working with adults and children to evaluate the dimensions of the 'theory of mind' and the cognitive, social-emotional, and language components underlying them. This was to determine how affective theory of mind would be to a person's holistic development. They

found that developing the ability to reflect on one's own thoughts and feelings, and the thoughts and feelings of others ('theory of the mind') will increase children's motivation, meaning, repetition, self-regulation (Bloom, 2004) and abstract thinking to cope with everyday life and to deal with the thoughts and opinions of others.

Sue's state of self-recognition and self-consciousness (sense of self-awareness) will promote healthy emotional and social intelligence, or the competencies linked to selfmanagement and social awareness, which enable people to understand and manage their own and other's emotions in social interactions, so that Sue can have an optimistic future wherever life may lead (Goleman, 1998).

Subsequently, as Duncan (2011) suggests, the physical characteristics of OT supports the improvement of memory, concentration and cognition overall. During the 'resisted crawl' activity (see appendix 3) Sue has to maintain eye contact, focus and have good body composition thus all contributing aspects to the psychological characteristics of the wellbeing of Sue, as previously discussed. However, as Duncan (2011) highlights, it is argued that OT sessions must have a strong focus on the physical aspects to enhance the ability to access everyday tasks. If the focus is lost and becomes dominantly a cognitive behaviour therapy session (talking therapy that can help manage one's problems by changing the way you think and behave) then the actual physical skills, i.e. working on core stability and body strengthening will slow progression in all aspects of physical development and academia (Fortune, 2000). Consequently, wellbeing discussions with Sue are engaged with at the beginning of the sessions, to ensure Sue feels safe and secure in a positive environment (Scoffham and Barnes, 2011), with a focus on physical skills afterwards.

2.13 Wellbeing and Relationships

Goswami (2011) suggests that the quality of relationships, or (the way in which two or more people or things are connected, or the state of being connected) is recognised as an important aspect of children's wellbeing. McAuley et al. (2010) state that the capacity to form and maintain relationships is essential for functioning within society. This capacity for relationships is a key component to being mentally healthy and having a positive sense of

wellbeing. Rees et al. (2010), emphasises that children want and need positive, loving relationships with the people closest to them. Moreover, children having an active say in decisions that affect them within the family is also a key aspect for their overall life satisfaction.

Additionally, Fortune (2000) highlights that children also need positive, steady, relationships with their friends, with social withdrawal being a strong indicator of low wellbeing. Rubin et al. (2009) conducted empirical research regarding why children may lack social interaction and refrain from social activities. Their research examined the predictors and consequences of child and early adolescent social withdrawal. They emphasised that 'social withdrawal' refers to children isolating themselves from their peer groups. Social withdrawal is viewed as deriving from such internal factors as anxiety, negative self-esteem, and self-perceived difficulties in social skills and social relationships, inhibiting a child's happiness. As a result, Ryan et al. (2008) proposed that family and friends are fundamental, but more important than a particular family structure or a specific amount of friends are good, quality relationships that are loving, supportive, respectful and that create a balance between safety and autonomy. Kenneth et al. (2010) highlights that the experience of peer relationships is essential for development of the concepts of mutual respect, equality, and reciprocity, particularly with an emphasis of 'special best-friendships,' for the emergence of psychological wellbeing.

Goswami (2011) highlights, that the strongest impact on low wellbeing is where children experience weak, separated and uncaring relationships with their families or carers. Likewise, this could be a detrimental factor to Sue, with her presence at boarding school from Monday to Friday and not having any one to one contact during the week with her parents. Schaverien (2015) believes that being sent away for an education can be seriously damaging to a child's mental health. Emotional wellbeing may be ruptured to a broken relationship with parents. In addition, Nick and Bassett (2016), highlights that many children who attend boarding school may have to engage in counselling and treatment when into adulthood due to the psychological effects of separation from parents and the feeling of abandonment. Engler (2006) adds that this could develop into separation anxiety, or craving the warmth, closeness, safeness and love from a parent. These anxious feelings can contribute to children feeling tired, feeling unable to participate in physical

activities of OT, sadness and lowering of morale and wellbeing, impacting on happiness within school. However, as Petersons (2013) suggests, it is argued that children who attend boarding schools, have enriching relationships with teachers and peers and is a positive aspect towards building strong life skills and strengthening social skills to equip them for adulthood.

Nevertheless, Bowlby's attachment theory (1988), which was influenced by his own traumatic experience of attending boarding school, explains the crucial establishment of trust and security through a primary carer. Bowlby (1969) believed that attachment behaviours are instinctive and will be activated by any conditions that seem to threaten the achievement of proximity, such as separation, insecurity and fear. Furthermore, as Schore (2000) emphasised, the relationship between parents and children need to be consistent and nurtured to ensure strong, resilient children who become secure adults because of the strong attachments and bonds formed from childhood. Predictably, childhood experiences shape the personality traits and attitudes that lead into adulthood.

As Schaverien (2015) suggests, boarding schools can break healthy attachments with parents. As soon as the child and parents are separated, a child has to adjust to the fact that privacy is no longer guaranteed and the lack of love and affection. Simmons (2015) emphasises that this can further inhibit a child with dyspraxia, due to the difficulty of forming friendships and managing their emotions ineffectively. As Jones (2005) reports, children with dyspraxia, have their own views on the world and can be judged as 'living in their own little world's', which makes it difficult for outsiders to fully understand and appreciate. Patrick (2015) implies that this is also a contributing factor to the difficulty of making friends and the ability to keep a good rapport with family. Additionally, as Boon (2010) emphasises, the awkwardness and clumsiness can be seen as, 'strange' and 'weird', which many people may judge children with dyspraxia for. Consequently, as Reid (2013) recommends, a strong, positive connection between Sue and the researcher endeavours to enhance happiness and fulfilment in everyday life, thus ensuring the wellbeing of Sue is continually assessed once a week on a Friday, to endeavour to reduce any stress and anxieties that have arisen.

2.14 Wellbeing and Dyspraxia

Colley (2000) highlights, that children with dyspraxia often have a very cautious, fearful or anxious temperament. Jones (2005) implies that this temperament trait is known as behavioural inhibition (BI) and affects a child's behaviour, attention skills; ability to take on challenges, learning of new skills and possibly create a fearful nature. Additionally, as Colley (2000) emphasises, children may be very cautious or fearful of a new event or situation that could also be challenging or unpredictable. As a result, Sue knew that OT was at every break time to ensure consistency and continuity. Furthermore, as Sugden and Henderson (2007) reports, children may have social anxiety and separation anxiety, as previously discussed. Secure relationships are very important to children with dyspraxia and the need to be accepted and appreciated is of the uppermost importance.

2.15 Conclusion

In summary, this chapter has provided an overview of the literature in the related disciplines of dyspraxia, wellbeing and physical activities of OT, with a particular focus on on OT undertaken within a primary boarding school setting. It has taken a critically reflective approach to existing knowledge base and was structured in a logical way so that links could be made to the case study setting and to the case study child with dyspraxia. The literature review has helped shape the research question and focus, highlighting the lack of literature related to children's wellbeing and the physical activities of OT. The intention is to examine Sue's wellbeing, the influence of parents, friends and how holidays and time away from OT impact upon the performance of physical activity throughout the three school terms, as measured by the successfulness of the resisted crawl and cat physical activities of OT. The wellbeing and physical activities will be analysed for trends across each term and the terms will be compared for similarities and differences in terms of trends. The next chapter provides the methodology. This chapter will discuss the research process undertaken and methodological literature and considerations within this study.

Chapter 3

Methodology

3.1 Introduction

This chapter explores the interpretivist epistemology and constructivist ontology positions adopted within this study, as well as the methods of data collection and analysis considered most appropriate in order to gain data that helps respond to the study's research questions (see section 1.4). This chapter will also detail the participant and setting information within the study, explains the research process, as well as drawing on reflections during the data collection and analysis phase.

3.2 Interpretivist Epistemology

Interpretivism uses research to gain in-depth insight into the lives of respondents and to gain an empathetic understanding of why they act in the way that they do; as a result, interpretivist researchers tend to use qualitative methods in data collection (Schraw, et al., 2011). Schwartz-Shea (2011) observe that interpretivist researchers like to discover reality through participant's views, their own background and experiences. This method of determining reality was sought through the daily interactions between the researcher and Sue through the implementation of OT. Because the support teacher was the researcher too, the facilitation and observation of OT with Sue ensured that both physical and emotional aspects could be documented, thus examining the impact of wellbeing on the physical aspects. Creswell, (2014) recommends that having the experience and the rapport with working with the subject, gives the study a more justifiable and illustrative advancement due to the background and experiences already established, acknowledging potential interpretivist distinctiveness to the study.

Moses and Knutsen, (2007) suggests that there is a tight connection between interpretivist paradigm and qualitative methodology as one is a methodological approach (interpretivism) and one is a means in collecting data (qualitative). Researchers who are using interpretivist paradigm and qualitative methods often seek experiences, understandings and perceptions of individuals for their data to uncover personal reality

rather than rely on numbers of statistics (Horn, 2011). Furthermore, Willis (2007) reports that qualitative approaches often give rich reports that are necessary for interpretivists to fully understand contexts. Moreover, Sparkes and Smith (2014) maintains that qualitative methods are usually supported by interpretivists, because the interpretive paradigm portrays a world in which reality is socially constructed, complex, and ever-changing and therefore best suits education researchers whose purpose is to investigate a phenomenon in a group of students or individuals in a school setting (Moses and Knutsen, 2007).

Application of the interpretive approach was adopted because the researcher was interested in why something happens in an area where there is limited research: investigating the impact of wellbeing on the physical activities of OT for a child with dyspraxia, and making the study unique by emphasising wellbeing. Jones (2015) suggests that researchers and participants are interdependent and work collaboratively. The researcher interpreted the social reality of Sue through qualitative data collection and analysis to aid explanations and trends of wellbeing. The researcher was embedded in the process and context (throughout OT implementation) and remained open minded throughout the study to gain new knowledge developed and supported by Sue. Black, (2006) determined that the use of such an evolving and collaborative approach is consistent within the interpretivist belief that humans have the ability to adapt, and that social reality is a subjective experience which is purposeful for the engagement of qualitative data and analysis. As a result, the researcher looked at the individual circumstances of Sue, seeking what is the impact of wellbeing on the physical activities of OT, but recognising that her personal circumstances and social realities impacted upon this too, thus using qualitative explanations of interpreting observations and discussions to explain trends in her wellbeing.

Greig, et al. (2012), emphasised that this qualitative method supports participant observation (as the case study child) and is a means for exploring and understanding in response to the research questions. As proposed by Kirk et al (2006) in the interpretive paradigm, the crucial purposes of the researcher are to get an insight of the participant and detailed information through the process of deep attentiveness and empathetic understanding. Yin, (2009) suggests that the examination of the data is most often conducted within the context of its use, or within the situation in which the activity takes place. A case study might be created, for example, from the process by which Sue engages

with the OT activities. Chilsholm, et al. (2004) recommends that in order to explore the physical movements Sue uses, the researcher must observe Sue within the environment, such as observing the physical and emotional development within the OT sessions and assess the physical and emotional development at Friday lunch breaks. Thomas, (2015) highlights that this would contrast with experimental work, for instance, which deliberately isolates a phenomenon from its context, focusing on a limited number of variables.

3.2.1 How positivism was used to support interpretivism

This study has applied quantitative data collection tools (wellbeing scales and structured observations) to a qualitative methodology, as will be discussed in this chapter. It was assumed that a positivist epistemology should be addressed for the purpose of quantitative tools used (objective), however interpretivism was the fundamental focus to the study as the connection of quantitative tools and qualitative explanations were interpreted to show if there was any impact of wellbeing on the physical activities of OT for Sue.

Positivists assume that behaviours can be observed and objectively measured and analysed (Weber, 2004). Positivist research uses statistical techniques and adheres to specifically structured research methods to uncover single and objective reality (Bernard, 2011), as was used in the wellbeing questionnaires. The goal of positivist researchers is to make time and context-free generalizations (Lincoln and Guba, 2000). They believe this is possible because human actions can be explained as a result of real causes that precedes their behaviour and the researcher and the participant are independent and do not influence each other (Weber, 2004). In addition, Greig et al. (2012) supports the possibilities of researching children through a positivist approach as children can be researched measurably and objectively, implying that it is possible to use quantitative research when collecting data from children. Robson (2011) highlighted the importance of using both quantitative and qualitative data collection tools, as was used in this study. Sparkes and Smith (2014) adds to this understanding, indicating that adding quantitative data collection methods to a qualitative methodology can produce a final product which can enhance the significance of both methods; this ensures that strong research is obtained to answer the research question to full potential.

3.3 Constructivist Ontology

Constructivism is based on relativist ontology (Gillett, 1998), which this study has adopted through a qualitative methodology. Ontological questions in research are related to the nature of reality. As Neuman, (2003) recommends, there are two broad and contrasting positions: objectivism that holds that there is an independent reality, and constructivism that assumes that reality is the product of social processes.

Lincoln and Guba, (2000) suggests that constructivist ontology treats people as research participants and not as objects as in the positivist research approach. This methodology enabled Sue to make meanings of her own reality and appreciate her self-worth through progression in OT and enhance her overall holistic development (Gillett, 1998). This process can be seen as enabling or empowering Sue to freely express her views, which she may not have a chance to do with someone outside of the school system (Cohen et al., 2000).

Furthermore, as Pels (2003) suggests, constructivism favours 'reflexivity,' which in research is built on an acknowledgement of the ideological power and dominates the forms of enquiry over the researcher and the researched, thus individually and collectively creating meaning from the experiences encountered (Shacklock and Smyth, 1998). The process of reflexivity is an attempt to identify, do something about, and acknowledge the limitations of the research, such as its location, subjects, process, theoretical context, data, and analysis, and recognize that the construction of knowledge takes place in the world and not apart from it (Pels, 2003). Consequently, the researcher assumed that to be reflexive in engaging with research, they were required to be honest, ethically mature in research practice, non-judgemental and adhere to neutrality. In doing so, when the researcher was listening to Sue's conversations and discussions, the researcher did not pass personal opinion or judgement when engaging with OT and being present at Friday lunchtimes.

3.4 Case study design

Case study research involves the intensive study of a specific case (Hopkins, 2008); in this case, seeking the impact of OT on a child with dyspraxia. It is based upon the argument that understandings of human activity, depends on analysis of its development over time and the environment and context within which the activity occurs (Newby, 2014). Case study designs are used to obtain holistic understanding of a set of issues and how they relate to a particular construct (Hopkins, 2008). You cannot generalise from a case study (Thomas, 2015). This is why Sue needs tailored dyspraxic support on a one-to-one basis.

Jones (2015) proposed that case studies be used for physical educational purposes of individuals who have benefited from increasing their exercise and physical capabilities. This is another one of the reasons why a case study design was used to support Sue's engagement with OT. Jupp, (2006) reports that the use of the case study is important because it gives the researcher an opportunity to collect multidimensional data. This researcher was able to conduct observations, wellbeing questionnaires and questioning through natural conversations, which provided a very detailed picture of Sue. Due to the structured observations specifying movements linked to specific body parts, the researcher was able to analyse each body part in detail, giving the study more specific data to look for any progression or recommendations to be made for the future, empowering PE and OT practices. Baker et al. (2011) suggests that many people believe that case studies can inspire and motivate, creating a novel study to enlighten future practice.

Variations in terms of intrinsic, instrumental and collective approaches to case studies allow for both quantitative and qualitative analyses of the data (Yin, 1994). Jones (2015) extends Yin's (1994) ideas of how the researcher can investigate in depth using a variety of quantitative and qualitative data gathering methods to produce evidence that leads to understanding of the case and answers the research question.

Barker et al. (2011) suggests that the 'single-case' research method is a dominant technique for investigating change in outcome variables such as emotional development, performance, psychological principles and for assessing the effectiveness of the OT activities. It has numerous uses within the context of PE and activity, such as in the development of more effective physical techniques for children, supporting health and

movement and for the advancement of PE. Consequently, as Thomas (2011) advises, a great deal can be collected to enhance authenticity and originality that would not normally be easily obtained by other research designs. Bell (2010) highlights that the data collected is normally richer and of greater depth than can be found through other investigational designs (Bell, 2010).

However, critics, of the case study method (Flyvbjerg, 2006) believe that the study of a small number of cases can offer no grounds for establishing reliability or generality of findings. These findings can lack the control and rigour that enables definite conclusions to be drawn from the data. Moreover, as Bell (2010) implies, the intense exposure to study of the case biases the findings and that a sample size of one is too small for any meaningful research. Nevertheless, as Yin (1994) emphasises, this is an infrequent study and large samples of similar participants were not available; this research has obtained a depth of data surrounding the question which has been invaluable to the subjects. Additionally, Thomas (2011) emphasises that due to the methodological perspective being qualitative, this study was not seeking for generalizable results but investigating depth rather than breadth, and to understand complex social processes, capturing essential aspects of a phenomenon from the perspective of Sue. Due to Sue having dyspraxia, this was a core focus to the study because the researcher wanted to obtain deeper knowledge of dyspraxia. This was to gain more insight into how OT can be advantageous to changing the lives of children with dyspraxia in the foreseeable future and to offer new knowledge to the field. As Gillham (2000) advises, this research sought to uncover beliefs, values, and motivations that encompass Sue as a whole person when observing Sue during OT and measuring wellbeing.

3.4.1 Participant and setting information

The participant selected for this study was an 11- year- old girl with dyspraxia who attends a private school and boards five days a week. Sue was born in the United Kingdom and is of Nigerian descent. Sue's parents originated from Nigeria and live in London. Sue has no siblings but is part of a big extended family and the Nigerian community. The researcher works on a one-to-one basis with Sue, implementing OT activities during morning break times.

Sue attends a co-educational day and boarding preparatory school for children between the ages of 7 and 13 in Broadstairs, a coastal town on the Isle of Thanet, in East Kent, England. The main school building and other smaller buildings, including the Music and Science/Technology departments, are set in beautiful grounds. The boarding accommodation for Sue is 2-3 minutes walking distance from the main school. Currently there are 202 children on roll.

3.5 Observations

As recommended by Thomas et al. (2011), observations are a data collection method used to gather detailed information about a situation or event, such as the observation of the physical and emotional aspects of OT in relation to this case study about Sue. Silverman, (2006) suggests that observations are used to describe the activities, participants and the meaning of the observations from the researcher's perspective. Observation data should be factual and accurate. As Tisdall et al. (2009) recommends, the researcher was a participant observer because the researcher participated in the ongoing activities with Sue, such as conversations with Sue, supporting with the physical skills of OT and play with Sue throughout Friday lunchtimes, and recorded the observations. Tisdall et al. (2009) suggested that this method allowed for the researcher to gain empathy through personal experiences, and by acting as a member the researcher could gain insight into the meanings, viewpoints, values and problems of Sue, giving authentic data.

This case study will use a structured format, using a tick list method (Jenkinson, et al., 2002) to observe the physical movements of the OT activities that were engaged with every day by Sue. Additionally, a semi-structured format, was applied to observe and comment about the emotional state of Sue. Finally, an unstructured observation method was implemented to observe and comment freely at Friday lunch breaks to see if there were any benefits to Sue's self-esteem and confidence following the impact from OT at the end of the school week. Using this data, the researcher applied the coding process (Saldana, 2012) to highlight any continual patterns and themes that were accentuated. Respectively, the researcher informed Sue when observations were taking place (Simpson and Tuson, 2003).

3.5.1. Structured observations

The structured observations were a format consisting of the relevant physical skills required to fulfil an OT activity. The process throughout observing was to either tick (yes, achieved) or cross (not able to complete) next to the relevant skill. All of the activities were addressed through different body parts and specific skills. As demonstrated in the resisted crawl activity, the head section specified that the head is up, eyes maintained on focal point and looking forward. In the arms/hands section, it specified that hands are flat and under the shoulder and fingers pointing forwards. In the body section, it specified that the body helps to keep the momentum of the crawl moving forwards and backwards, opposite arm to leg, crawling for about 10 metres, starting in the 'four square' position and having good core stability. In the legs/feet section, the observation checklist specified that knees are under the hips and feet flat and slide along the floor during the exercise (see appendix 3).

As demonstrated in the cat activity, the head section specified to drop the head smoothly, to look down between knees, keep the head down whilst maintaining stillness for five seconds, and raise the head back up to look forwards. In the arms/hands section, it specified that arms are straight, hands flat and thumbs out. In the body section, it specified to ensure arching of the back to support posture of the body and the use of the 'four square' position needed to support core stability. In the legs/feet section, it specified to keep knees still and to keep feet still (see appendix 2).

Cohen et al. (2000) advises that the purpose of the structured observation was sought to ensure straightforward, reliable and strong comparisons throughout the study. The researcher used this quantitative format to record any progression made in the physical activities using either a tick or cross next to the movement involved (Atkinson, 2012). As stated by Hakim, (2000) having set objectives in place, gives less risk of losing the value of the observation and enables the researcher to concentrate on the task at hand to full potential, enhancing more precision on the physical skill being engaged with.

Newby (2014) recommends having this structure in place to ensure a more time effective and manageable technique for data collection. This means that when a large sample could

be obtained, the findings are representative, and result in the ability to be generalised. However, structured observations can lack validity due to participants identifying that they are being observed and may act unnaturally in the tasks (Smith, 2008). Nevertheless, observations were recorded every day on Sue, which increases their validity.

3.5.2 Semi-structured observations

Due to the physical aspects of the study being observed with a structured approach, the emotional aspects were designed using a semi-structured format. This was to enrich Sue's overall wellbeing, linking any emotional progression with physical progression. For example, if Sue successfully strengthened the body through daily engagement with the cat activity, then Sue could feel more happy and confident with herself, also enhancing concentration and working memory when back in the classroom. As recommended by Blandford (2013), the researcher gathered this data using a predetermined method in a written layout, highlighting the emotional features including: happiness, body language, expression, communication and control of emotional states, including excitement, sadness and resilience. This data was collected every OT session during each of the 2 activities, documenting any dialogue, thoughts and feelings made by Sue. This was then categorised according to the wellbeing scale used for this study (see appendix 4). Smith, (2008) implies that by detailing the emotional aspects of Sue, provided some structure to guide the researcher in organising the observations but that the structure was not immutable and could be adapted to circumstances evolving as needed to meet the overall goals of the study.

However, the limitations posed with this style of observation are that Sue may have responded, acted and behaved differently according to current mood and there may be difficulty in assessing any emotional development coherently (Molnar and Purdy, 2016). Nevertheless, it was assured that positive conversations and praise were had at the beginning and throughout the duration of OT, thus enhancing a positive environment designed to influence Sue's emotional wellbeing by feeling contented and empowered to engage with the tasks at hand.

3.5.3. Unstructured observations

The aim of the unstructured observations were to observe Sue freely at Friday lunch breaks to perceive if there was any impact of wellbeing on physical activities of OT with a child with dyspraxia within a more natural social setting. These observations were conducted on a Friday during natural play time, as it was at the end of the week for OT. This gave the researcher an opportunity to look at Sue holistically and to observe interactions with others, physical movements, friendships and communication thus concentrating on the aspects of emotional wellbeing. As Seale, (2001) highlights, 'enquiring from the inside,' ensured that the researcher could actively engage in natural conversations with Sue, accentuating the use of questions to support the interpretivist approach to the study. As recommended by Austin (2016), the researcher ensured that only a few general, open ended questions were asked and that neutral exploratory language was used. Due to the established relationship between the researcher and Sue, the researcher was able to observe and talk to Sue at lunchtimes in a relaxed manner either by being a bystander (Neuman, 2000) or by being actively involved with the phenomenon. This reduced any occurrences of 'reactivity' (Newby, 2014) which refers to situations where a child's behaviour is different when they know they are being observed (Austin, 2016). The recording of the free notes were written in a notebook which were transferred to a typed word document. These observations were colour coded, then categorised more specifically according to the wellbeing scale (see appendix 5 and 6).

Unstructured observations are less reliable as other variables cannot be controlled. Laurie (2016) recommends that this makes it difficult for another researcher to repeat the study in exactly the same way. Additionally, in order to obtain acceptable and thorough data, some structuring will be necessary (Thomas, et al., 2011). Consequently, the researcher used the coding approach to structure the free notes into themes that were apparent (Hopkins, 2002). Nevertheless, Maxwell, (2013) states that unstructured observations provide rich and detailed data and include unexpected behaviours, which could aid to the research. As a result, unstructured observations offer holistic data to be collected which can be advantageous to all involved as it gives a broad overview of a situation.

3.5.4 Participant researcher

Within the field, the researcher has important decisions to make on the level of interactivity, and his or her effect on the production of social behaviours. Roles range from non-participant observation where the researcher participates from the 'outside' to participant-observer where the researcher is active in the phenomena being studied (see Table 1).

Participant Observer Role	Description of Role	Advantages	Disadvantages
Complete participant	Wholly concealed, thus covert. The researcher is as an ordinary participant with total immersion in the culture, or already a member of the group that they decide to study.	Allows study of otherwise inaccessible environments. 'Experience' the environment.	The researcher is involved in existing social practices and expectations, which can be limiting. Hard to optimise all data collection opportunities. May 'go native'.
Participant-observer	Overt. The researcher is a fully functioning participant first, and an observer second.	Allows questioning and investigation.	May 'go native'. Challenging to retain detailed information.

Observer- asparticipant	Overt. Observation with little participation. Often mainly an interviewer.	Can set the context for interviews. Can offer a level of detachment if needed in research.	Risk of not gaining a deep enough understanding of the setting and people within.
Complete Observer	Covert or overt. Researcher has no contact/interaction with participants.	Useful for certain phases of fieldwork.	Questioning may be impossible. Limits what can be observed and rigorously tested.

Table 1: Gold's (1958) four participant observer roles (adapted from Bryman, 2008)

The researcher adopted the participant-as-observer role, due to the implementation of OT exercises with Sue during morning break times. The researcher was able to participate in the ongoing activities with Sue and record observations. As Bryman (2008) explains, the strengths of this position when obtaining data were that the researcher could see how Sue was performing and progressing, allowing for questioning and investigation. This produced rich and valid qualitative data. The researcher could gain empathy through personal experiences with Sue. By acting as a member, the researcher could gain an insight into Sue's viewpoints, values and problems; enriching authentic data.

As Bryman (2015) explains more recently from his previous (2008) literature, the challenges of this position were that there was a risk of getting too involved with Sue and therefore may give biased data. There is a possibility that Sue could progress more positively than another child due to the rapport between the researcher and Sue. The researcher could have missed detailed information due to being a participant and an observer, and therefore may not have been able to retain *all* that was active in the phenomena.

3.6 Wellbeing scales

This methodology has discussed many of the qualitative data used within this study. To give this thesis originality, wellbeing scales were used as a quantitative measure to track

Sue's wellbeing from the implementation of OT. As recommended by the Organisation for Economic Co-operation and Development (OECD) (2013), wellbeing scales are used to measure how someone is feeling and functioning. Measures of subjective wellbeing aim to capture people's self-reported thoughts and feelings about various aspects of life (for example, life satisfaction, happiness, relationships, psychological wellbeing). Huebner et al. (2011), recommends that a scale often be used by scientists and psychologists to measure wellbeing. Wellbeing measures take the form of statements, 'Likert scales' or tick boxes, which best describe the people's thoughts and feelings over a period of time.

3.6.1 Validity and Reliability of wellbeing scale

Stewart-Brown, et al (2011) developed the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) in 2007, following UK evaluation of a longer mental wellbeing measure. It consists of 14 positively worded items relating only to positive attributes of mental health. Stewart-Brown (2013) highlights, the WEMWBS has been tested and quantitative validation has been used with young people (13-15years), minority populations (Chinese and Pakistani) and users of mental health services and their carers, showing that the scale was robust. Clarke et al. (2011) highlights that all of these groups have found WEMWBS easy to complete and reported that it provides a credible representation of mental wellbeing. Consequently, the researcher found this a trustworthy and valid resource to use and it was adapted for Sue and to fit the needs of the study.

Stewart-Brown, et al (2011) found that the test-retest reliability was high and the scale classified population groups in a way which was consistent with results of other surveys. WEMWBS was not compatible with the Rasch Model (a psychometric model for analysing categorical data, such as answers to questions on a reading assessment or questionnaire responses). Therefore, a reduced 7 item scale named the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) was determined which met with the Rasch Model requirements. These findings offered an understanding into mental wellbeing across different groups with the support from qualitative evaluation. Using rigorous approaches for research and evaluation in public mental health, WEMWBS's positive focus offers a developmental perspective, helping to support policy makers, programme participants and

survey respondents towards mental wellbeing and facilitating identification of protective and supporting factors.

3.6.2. Adaptations to the wellbeing scale

The researcher adapted the WEMWBS (see appendix 7 and 8). This wellbeing scale was to measure Sue’s mental wellbeing, which was approved by the special needs co-ordinator and the school. Tennant et al. (2006) highlights that WEMWBS was created by mental wellbeing experts, and is often used by scientists and psychologists. Tennant et al. (2006) proposed it was validated on a student and representative population sample, with content validity being assessed by reviewing the frequency of complete responses and the distribution of responses to each item. Internal consistency was assessed using Cronbach's alpha (estimate of the reliability of a psychometric test).

The adaptations to this scale were made to ensure the questionnaire was child friendly ensuring the language used was understandable and clear. Words such as ‘optimistic’ were changed to ‘good’, and the results analysis with a point scoring system between (0-32) (see appendix 8- original copy of wellbeing scale) that indicated between a low wellbeing measure and an above average wellbeing measure was deleted. This was deleted because it was felt that this could have been detrimental to Sue’s wellbeing by labelling her with a number and informing her that she has low wellbeing. These adaptations ensured that there were no confusion or misjudgements for Sue. Refer to table (2) for the full amendments to the wellbeing scale. Gieve and Miller (2009), implies that effective language skills are essential for children to access their everyday learning. Language development and understanding is accepted as being critical to cognitive development and learning itself is seen by many as a social activity. Mercer (2000) highlights the importance of language, not only for accessing literacy, but across the whole of the curriculum and for Sue’s development.

Original wellbeing scale	Amendments to wellbeing scale
Wellbeing scale questions:	

1.I've been feeling optimistic about the future	1.I've been feeling good about the future
2.I've been feeling useful	2.Stayed the same as original question
3.I've been feeling relaxed	3. Stayed the same as original question
4.I've been feeling interested in other people	4. Stayed the same as original question
5.I've had energy to spare	5. Stayed the same as original question
6.I've been dealing with problems well	6. Stayed the same as original question
7.I've been thinking clearly	7. Stayed the same as original question
8.I've been feeling good about myself	8. Stayed the same as original question
9. I've been feeling close to other people	9. Stayed the same as original question
10.I've been feeling confident	10. Stayed the same as original question
11.I've been able to make up my own mind about things	11. Stayed the same as original question
12.I've been feeling loved	12. Stayed the same as original question
13.I've been interested in new things	13. Stayed the same as original question
14.I've been feeling cheerful	14. Stayed the same as original question
Point scoring questions with statements	Likert scale scoring (1-5)
Result analysis	Result analysis deleted

Table 2- shows the amendments made to the WEMWBS to ensure the adapted version was suited to Sue's understanding.

The 'Likert scale' was added and used in the wellbeing scale instead of the point scoring method so Sue could mark either a one being the lowest or five being the highest against

the questions posed. This was changed to be more digestible and less complicated for Sue. This was to ensure that Sue was able to listen to, retain, understand and interpret the questions with ease, instead of having to contemplate the point scoring statements within each question (see appendix 8- original copy of wellbeing scale). Likert (1932) developed the principle of measuring attitudes by asking people to respond to a series of statements about a topic, in terms of the extent to which they agree with them, enhancing the cognitive and affective components of attitudes. As Bradshaw and Keung (2010) highlights, Likert scales have the advantage that they do not expect a simple yes / no answer from the respondent or an opinion. The data then could be monitored by the researcher to assess and to be made aware off certain feelings and emotions that were low, without Sue being affected.

3.7 Data Analysis

Analysing this data was to ensure the evidence obtained could answer the research question. Moreover, Jones (2015) implies that quantitative and qualitative data are different in their nature but the principles of analysis of each are not entirely different. They both involve inference as they both reached a conclusion based on the evidence obtained and both involve making comparisons (Denzin and Lincoln, 1998). As a result, this study analysed the data collected between November, 2016 and March, 2017 and consisted of three school terms. The first term consisted of 5 weeks, the second term consisted of 4 weeks and the third term consisted of 4 weeks.

3.8 Data collection analysis

The data collection process was based on an 11 year old girl with dyspraxia who attends a private boarding school five days a week. The researcher and Sue worked in the occupational therapy room, which included mirrors to observe the body parts and to observe and look at the technique being used alongside the relevant equipment needed,

i.e. mats. Data collection was sought by observing Sue's physical skills using the structured format, using either a tick (yes, can do it) or a cross (no, cannot do it) next to the relevant skill. This data was then inputted onto an excel spread sheet and the data was analysed using what the average was for the overall body part and what the average was for the parts of the body (head, body, arms, hands, legs, feet). These averages were then compared between the beginning and at the end of each of the three school terms to see if any progress was made, to see if there were any differences to physical and emotional aspects without OT being received over a holiday period.

Qualitative analysis took place during data collection using the semi structured and unstructured observation methods. The semi-structured notes were obtained alongside the structured observations during OT and documented overall thoughts and feelings to do with the physical activities or general wellbeing, natural conversations and dialogue from Sue. These notes were colour coded against the categories that were obtained from the wellbeing scale. These were then summarised linking them with the wellbeing scale and then placed in the descriptive table on an excel spreadsheet under the OT notes section for the researcher to compare and contrast the key points throughout the three school terms as will be discussed in section 3.8.4. The researcher was continually seeking what the impact of wellbeing on physical activities of OT had on Sue using this data. The same data analysis approach applied to the unstructured observations that were collected during Friday lunchtimes in Sue's natural setting including the outside field and surrounding outdoor areas, art room, common room and the sports hall. The researcher wrote many comments to stimulate critical thinking about what was being observed. This method supported the process of making sense of the data. As Creswell (2014) highlights, organising, abstracting and integrating the data may permit researchers to outline any patterns that can be transformed into categories. As the data analysis approach was the same as the semi-structured observations, this data was then placed in the descriptive tables under the free notes section for the researcher to compare and contrast the key points throughout the three school terms linking them to the wellbeing scale. Also, seeking if the data collected was supporting the main aims of the study. This was to ensure the data concerned was focused and ensured any gaps in the research that needed evidence were collected (Denzin and Lincoln, 1994).

3.8.1 Trustworthiness in the analysis of the qualitative data

To ensure the trustworthiness in the analysis of the qualitative data, the researcher ensured that the data collected was reliable in the form of dependability (Sparkes and Smith, 2014). This was to establish that the research study's findings were consistent and repeatable, with semi-structured observations taken during every morning break time. As Sparkes and Smith (2014) explain, researchers aim to verify that their findings are consistent with the raw data collected. The researcher wanted to make sure that if some other researchers were to look over the data, they would arrive at similar findings, interpretations, and conclusions about the data. This was important to make sure that there was not anything missed in the research study, or that the researcher was not misguided throughout the process.

Lincoln and Guba (1985) propose that ensuring credibility is one of the most important factors in establishing trustworthiness in the analysis of the qualitative data. To ensure that the findings were true and accurate, the researcher instituted self-monitoring for bias at every level of research. This was sought by ensuring that continuous practice was fundamental with Sue throughout her OT sessions and throughout the observational process. When the data was collected, the analysis of the data, supported by the use of coding quotes, coding categories and transferring transcripts to descriptive tables, was scrutinised to enable an accurate investigation of what is the impact of wellbeing on the physical activities of OT with a child with dyspraxia. The researcher ensured that there was thorough record keeping with the semi-structured observations, which were carried out every break time and unstructured observations which were obtained every Friday lunchtime throughout the research process. These observations were kept in an accessible file to ensure that the researcher could use them as working documents to make comparisons daily. The researcher ensured quality, honest and proper organization of data throughout the transcription of the semi-structured and unstructured observations and of the use of coding quotes and categories and transferring transcripts to descriptive tables, as quickly as possible, as will be explained in more detail in section 3.8.4.

As Sparkes and Smith (2014) illuminates, in research involving case studies, a researcher typically assumes that the results will be transferable. Guba and Lincoln (1989) propose that generalizing is difficult or impossible because one person (Sue) cannot represent all

similar children or situations. For example, Sue's progression throughout her OT activities cannot represent other children's progression throughout OT activities. Also, conclusions drawn in this case study will only be about Sue who is being observed (Sparkes and Smith, 2014). However, although the researcher cannot prove that the research study's findings will be applicable, the researcher used thick description to show that the research study's findings can be applicable to other contexts, circumstances, and situations (Lincoln and Guba, 1985). The thick description that was used has been discussed in this chapter, detailing the setting information and participant, where the observations occurred and of the process of data collection and analysis. This information then helps the reader to construct the scene that helps provide a richer and fuller understanding of the research setting.

3.8.2 Quantitative analysis

Field (2013) emphasises that quantitative methods of data analysis can be of great value to the researcher who is attempting to draw meaningful results from a large body of qualitative data. Consequently, as this research is based on a case study (qualitative data) and observational methods were used to seek research, the quantitative data was used to support and compliment the study in order to answer the research question. Henderson, et al. (1999) reports that the quantitative data used was to enhance the study's original and authentic outlook to fulfil any gaps in the expertise of OT and children's wellbeing research and developments.

3.8.3 Coding

Coding was used to look for distinct concepts and categories in the data. This was applied to the semi-structured (OT notes) and the unstructured observations of Friday lunchtime free notes, highlighting the emotional aspects, which supported the analysis (Young and Atkinson, 2012). Silverman (2006) recommends that codes should be valid and accurately reflect what is being researched. The researcher used coding to make it easier to search data and to make comparisons. Howells and Gregory (2016) suggested that the researcher

used different colours to highlight and code continual and familiar concepts that related to the particular categories, allowing for a close study of data by using a visual image.

3.8.3.1 Coding quotes

The researcher coded the written quotes as coded quotes can enrich an analysis and make the report much more readable (Corden and Sainsbury, 2005). This helps to build trust in the findings presented, as it elucidates the connection between the open text comments analysed and the coding structure imposed in analysis (Acton and Miller, 2009). Moreover, coding quotations offer readers greater depth of understanding. Corden and Sainsbury, (2005) suggests that children's spoken words sometimes show the strength of their views or the depth of feelings or, their passivity and lack of engagement in ways that the researcher's own description cannot. While the researcher might describe findings using terms such as anger, surprise, happy, hope or lack of interest when describing findings, the actual words spoken are sometimes a better representation of the depth of feeling. Also, the researcher ensured that the quotes used were to show unexpected data, show instances that were unusual and to describe a situation particularly well, according to the categories that linked to the wellbeing scale.

3.8.3.2 Coding categories

The coding was linked to the categories which were drawn from the wellbeing scale. These were categorised into five areas, which were self-esteem (emotive responses), self-esteem (lateral responses), psychological (cognitive), physiological responses and relationships. Ritchie and Lewis (2003) recommends that categorizing this information may suggest new ways of thinking or new codes that the researcher may have not thought of previously. The researcher ensured that the categories were as sensitive to the data as possible and that there were enough categories to encompass all relevant data.

3.8.4 Transferring transcripts to descriptive tables

Once the data was categorised, the transcript (Bailey, 2008) obtained from the OT notes and the Friday lunchtime notes were written under each colour coded category, highlighting the term that the data was obtained from and relating to each of the wellbeing scales. The Friday lunchtime notes were dated accordingly and the OT notes were linked to the physical activities that were dated and placed under the days of the week (Monday-Friday). The researcher made comments linked to the wellbeing scale to ensure clarity and to link to each of the relevant numbers (1-14) of the wellbeing scale. This was then summarised to ensure the key points of the findings were made apparent and clear (see appendix 6). As suggested by SavinBaden and Howell-Major (2013), the summarised data was then written into descriptive tables to present the data clearly and easily using overarching themes which were from the wellbeing scale. The description of the categories within the overarching themes were sectioned into OT notes and lunchtime free notes. Savin-Baden and Howell-Major (2013) suggests that descriptive tables contain a base-level description of the data using overarching themes with a description of categories. Gray, (2009) recommended that once the data was transferred from the transcripts into the descriptive tables, this allowed for the researcher to summarize a general overview of the findings quickly and to ensure manageability when making any comparisons and analysis (see appendix 13).

3.8.5 Trend analysis

Thomas et al. (2010) define trend analysis as a research method for understanding how and why things have changed, or will change over time. It can be defined as an approach to analysis which collates data and then attempts to discover patterns, or trends, within that data for the purposes of understanding or predicting behaviours. For the purpose of this study, trend analysis was used to show the positive and negative trends of wellbeing that Sue displayed to show the impact of wellbeing on the physical aspects of OT for a child with dyspraxia. To enhance the conclusions of data, line graphs were constructed to show the trends of wellbeing that were obtained from Sue every Friday. As Armour and Macdonald (2011) highlights, line graphs are useful for showing trends, particularly in

continuous data. These were constructed for each of the 3 school terms, an overall wellbeing graph and a comparative graph to show Sue's wellbeing over each of the terms.

3.9 Conclusion

In this chapter, the key methodological and epistemological debates that have influenced the research design have been discussed. The researcher has aimed to utilise the case study design and epistemological approaches that will enable an accurate investigation of what is the impact of wellbeing on the physical activities of OT for a child with dyspraxia. The chosen approaches for the methodology have helped shape the research question and focus, and highlighted the interpretivist epistemology and constructivist ontology to the study, the case study design on Sue, data collection methods, ethical considerations, validity and reliability. Data analysis approaches discussed in this chapter will be used to aid explanations in the next chapter using the critical reflective approaches to existing knowledge and the links made to the case study setting and to Sue. The next chapter will also present the observed positive and negative trends in wellbeing over the 3 school terms and present the results of the successful and unsuccessful body movements at the highest and lowest points of wellbeing over the 3 school terms.

Chapter 4

Discussion

4.1 Introduction

The key methodological and epistemological debates that have influenced the research design and utilised quantitative and qualitative approaches to enable an accurate investigation of what is the impact of wellbeing on the physical activities of OT for Sue have been outlined in chapter 3. This chapter will present the results from the wellbeing data collected from each of the three school terms, present the results from the successful and unsuccessful body movements at the highest and lowest points of wellbeing from each of the three school terms and compare them with Sue's wellbeing over the three school terms. Also, this chapter will discuss the trends of wellbeing that Sue displayed throughout

the 3 school terms, clarifying if there was no or any impact of wellbeing on the physical activities of OT. Following the trends of wellbeing, the discussion will highlight the highest and lowest points of wellbeing to the successful and unsuccessful body movements of resisted crawl and cat at these times. The OT observations within this discussion will make reference to either the resisted crawl and cat activities and the free notes will be referenced accordingly throughout this chapter.

4.2 Overall wellbeing

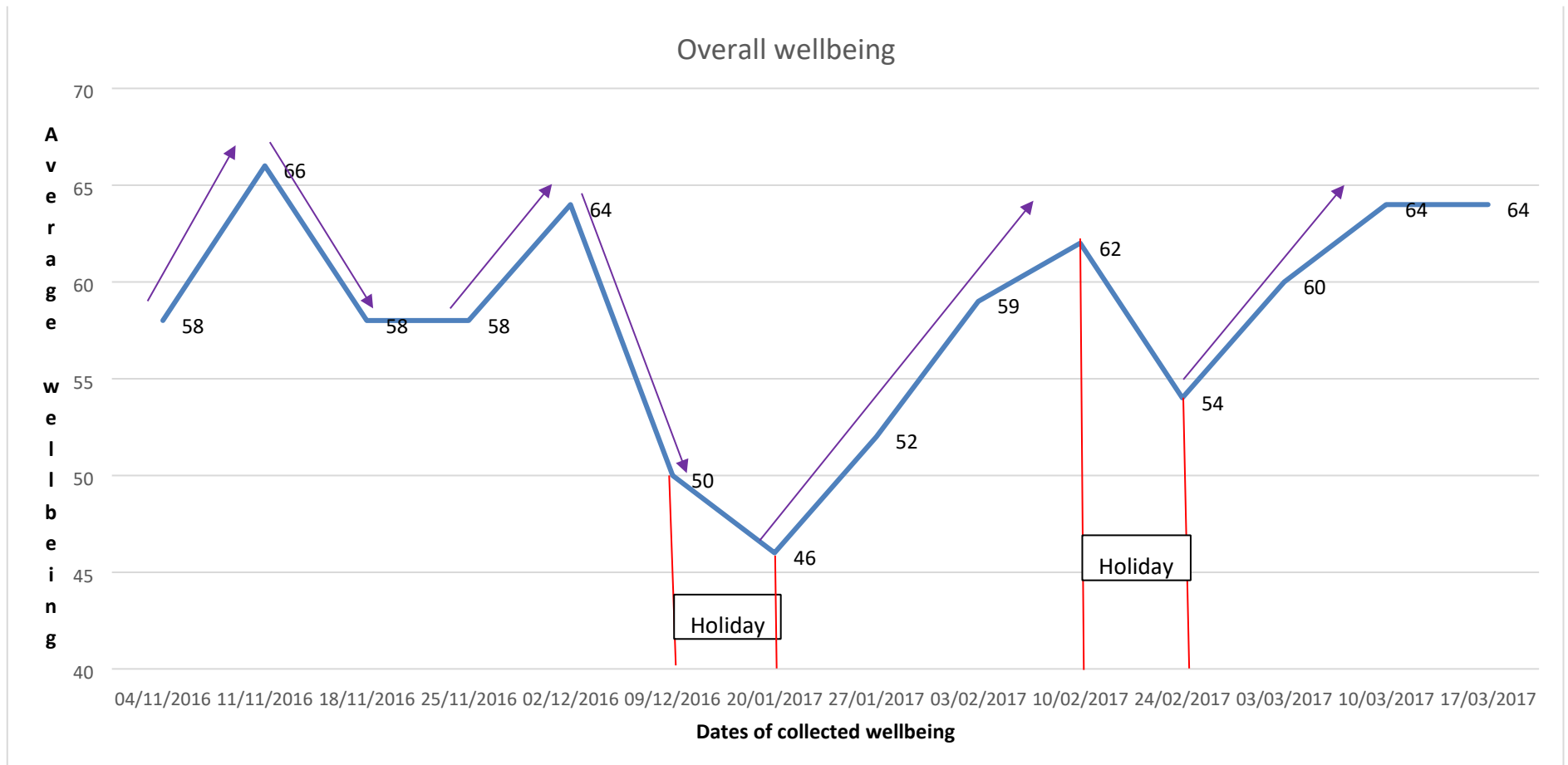


Figure 1- illustrates Sue's overall average wellbeing for all three terms that data was collected in and ran from 4th November to 17th March.

Term 1 is the first term of data collection and ran from 4th November 2016 until 9th December 2016. The graph illustrates that there is a positive trend in Sue's wellbeing, from 4th November to 11th November with an increase of 8%. This is the highest point recorded of her overall wellbeing. This was followed by a negative trend where Sue's wellbeing dropped by 8% from 11th November to 18th November. There was no change in Sue's wellbeing between 18th November and 25th November. From the 25th November to the 2nd December there was a positive trend with 6% increase. From here, there was the most dramatic negative trend, within the term, with a decrease of 14% from 2nd December until 9th December, where Sue reached her lowest point on her overall wellbeing.

This was followed with a 4 week holiday period from 9th December to 20th January, which shows a negative trend where Sue's wellbeing dropped by 4% by the start of term 2 on 20th January. This is the lowest point recorded of her overall wellbeing.

This was followed by the start of term 2, which is the second term of data collection and ran from 20th January 2017 until 10th February 2017. The graph illustrates that there is a positive trend in Sue's wellbeing, from 20th January to 10th February 2017 with an increase of 12%. The greatest increase was by 7% and this occurred from 27th January to 3rd February.

This was followed with a 2 week holiday period from 10th February to 24th February, which shows a negative trend where Sue's wellbeing dropped by 8% by the start of term 3 on 24th February.

This was followed by the start of term 3 which is the 3rd term of data collection and ran from 24th February until 17th March. The graph illustrates that there is a positive trend in Sue's wellbeing, from 24th February to 17th March with an increase of 10%. The greatest increase was by 6% and this occurred from 24th February to 3rd March.

4.3 Term 1

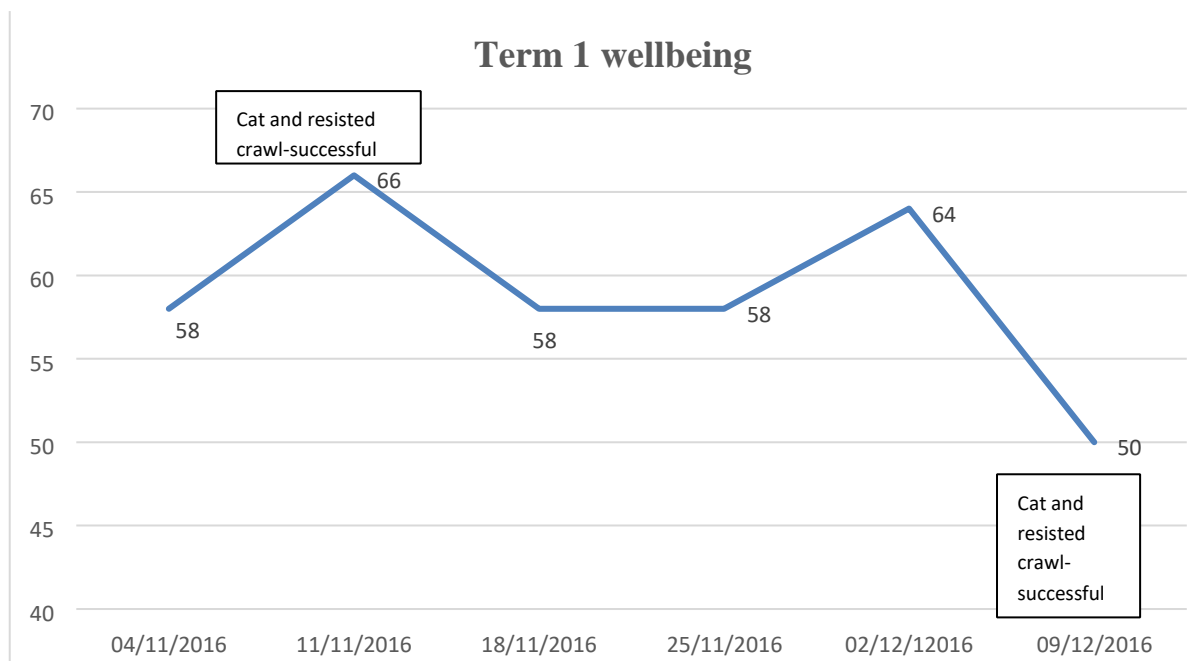


Figure 2- illustrates Sue's overall average wellbeing for Term 1. Term 1 is the first term of data collection and ran from 4th November 2016 until 9th December 2016.

The graph illustrates that there is a positive trend in Sue's wellbeing, from 4th November to 11th November with an increase of 8%. This is the highest point recorded of her overall wellbeing. This was followed by a negative trend where Sue's wellbeing dropped by 8% from 11th November to 18th November. There was no change in Sue's wellbeing between 18th November and 25th November. From the 25th November to the 2nd December there was a positive trend with 6% increase. From here, there was the most dramatic negative trend, within the term, with a decrease of 14% from 2nd December until 9th December, where Sue reached her lowest point on her overall wellbeing. Also, the graph illustrates that at the highest wellbeing point on 11th November Sue was successful in all of the body movements for the resisted crawl and cat. At the lowest wellbeing point on 9th December, Sue was successful in all of the body movements for the resisted crawl and cat (see appendix 14 for resisted crawl and cat results).

4.3.1 Term1- week 1

During the week of the 4th – 11th November Sue went in a positive direction in terms of her wellbeing, but Sue struggled with head movement for the cat over a 2 day period (see appendix 15 for all the successful and unsuccessful body movements). It was noted from the OT observations (semi-structured) that she was particularly distracted because she was soon to be reunited with her mum, and she had to be returned to being on task during the physical activity session. The following quotes indicate that:

[Sue said], “can’t wait to see my mum, feels ages. We are going to Pizza Hut and hopefully go to the cinema together” (Sue’s free notes on 11/11/16, week 2, term 1).

“Can’t wait to see mum, miss her so much.”(Sue’s O.T notes from resisted crawl on 7/11/16, week 2, term 1).

Schaverien (2015) believes, that being sent away for an education can be seriously damaging to a child’s mental health and can create feelings of loss and may crave the attention from a primary caregiver. This may be why she was distracted and received the required attention she craved through the physical activity of OT. Hoffman, et al. (2017) strengthens Schaverien’s (2015) beliefs by enhancing the ‘missing of mum,’ contributes to the need that children want and yearn positive, loving relationships with the people closest to them.

4.3.2 Term 1- week 2

During the week of the 11th-18th November Sue went in a negative direction in terms of her wellbeing (see figure 2). The reasons to this could be because Sue was tired and lacked concentration and the lack of concentration with OT, due to having other priorities of finishing off an art project. OT notes from 14/11/16 show indications that Sue was:

“Not fully focused, lack of motivation,” (OT notes resisted crawl 14/11/16, week 2, term 1). “Tired, difficult to focus,” (OT notes cat 14/11/16, week 2, term 1).

“Improvement from yesterday, willing to participate. However, didn’t concentrate fully as wanted to finish OT early, to finish off an art project for an exam” (OT notes, cat 16/11/16, week 2, term 1).

As Bruni (2010) identified when children are tired they are more susceptible to mental exhaustion, lower morale, and mood. Furthermore, not only does lack of sleep and tiredness affect mood, but the mood and mental states can also affect sleep. Anxiety increases agitation and arousal, which make it hard to sleep, provoking stress (Kernis, 2002). Therefore, Sue could have felt anxious to want to get her art project completed with the added pressures of tiredness and lack of concentration (Friedel, 2009), inhibiting the physical activities of the OT sessions. Additionally, an excerpt from free notes on 18/11/16 shows an indication that Sue:

“After about five minutes, Sue’s friends came and found her and one of the girls says, “do you both want to go out on the ripsticks?” [an activity that is cross between skateboarding and snowboarding]. The other girl says, “Yes” but Sue says, “I want to do my art work.” Both girls leave the art room. After another five minutes, looks out of window, spots one of the girls she was with earlier, runs outside and says, “do you want to see what I’ve done?” Child replies, “No, I’m busy doing this,”(ripsticking). Sue smiles and walks back into the art room (Free notes on 18/11/16, week 2, term 1).

This could imply that Sue didn’t have the confidence to ripstick and wanted to withdraw from friends, to be alone to do her art project. However, Sue did want approval from friends. Subsequently, as Sue’s wellbeing went in a negative direction this week (see figure 2), being socially withdrawn at Friday lunchtime could have impacted on the physical aspects of OT. As Rubin et al. (2009) highlighted, ‘social withdrawal’ refers to the child isolating herself from the peer group. Social withdrawal is viewed as deriving from such internal factors as anxiety, negative self-esteem, and self-perceived difficulties in social skills and social relationship. Yet, Sue did want some recognition from her friends towards her art work efforts. This comment aligns with Kenneth et al. (2010) who proposed that the experience of peer relationships is essential for Sue’s development of the concepts of mutual respect, equality, and reciprocity. Also, emphasising ‘special best-friendships’ to enhance psychological wellbeing. Subsequently, it was noted from Friday lunchtime free notes that Sue mainly wanted alone time and to engage in her own activities. The following excerpt show similarities in the behaviours with regards to wanting alone time and socially withdrawing. The following excerpt from Sue’s free notes on 18/11/16, week 2, term 1, indicates that:

“Two girls approach the group, asked if they wanted to ripstick with them. Sue’s friend said yes but Sue didn’t want to, walked away from group. Walked to the chess area and

sat down and watched some children playing chess for approximately 10 minutes. Invited Sue to ripstick but didn't want to. Walked off around the field, on own, swinging arms from side to side. Walked back outside, walked over to the art room, and looked through the window. Walked back inside. Back out again and sat by the chess area until the end of break." (Free notes 18/11/16, week 2, term 1)

These comments align with the findings from Langford et al. (2014), who proposed that children receiving OT may lack the confidence to partake in playground activity. This could have been a contributing factor to why her wellbeing decreased this week.

Csikzentmihalyi, (2002) emphasised that this will affect children's abilities to participate in school activities and make or engage with friends, which can be difficult, because 'fitting in' is so important to a child's self-esteem and happiness. Ryan, et al. (2008) suggested that friends that hold good, quality relationships that are loving, supportive and respectful, create a balance between safety and autonomy. Even though Sue declined ripsticking, her friendship group did invite her twice to participate, showing that she had been thought about and included.

However, Maitland (2014) suggested children having 'alone time' at break times gives children the opportunity to work on self-growth, enjoy alone time and 'recharge their batteries,' thus an opportunity to become the 'best versions of themselves'; supporting personal independence, resilience, and coping strategies. This may be an advantage of having one to one OT, where Sue has had to build on independence and resilience with the support from the researcher throughout the physical activity of OT.

4.3.3 Term 1- week 3

During the week of 25th November-2nd December Sue's wellbeing trend went in a positive direction (see figure 2), with an emphasis on looking forward to seeing her mother.

Excerpts from Sue's OT notes on 28/11/16, week 3, term 1 indicate that Sue was:

"Looking forward to seeing mum at the weekend. Hoping will help with exam revision" (OT notes resisted crawl 28/11/16, week 3, term 1).

"Fully focused, straight on task, looking forward to seeing mum at the weekend" (OT notes cat 28/11/16, week 3, term 1).

These comments support Howard and Walton's (2015) viewpoint who suggested that this could be represented as an indication of excitement and having something to look forward to due to expressing positive emotions. Holder (2012) supported Howard and Walton's (2015) views by stating that those children feeling excited and looking forward to events supports positive thinking and the initiation of self-regulation in lifelong learning. Skinner and Zimmer-Gembeck (2016) acknowledge that the feeling of 'connectedness' (a feeling of being loved, understood and wanted by parents) enhances emotional feelings towards loved ones. In addition, Rees, et al. (2010) highlights, "looking forward to seeing Mum," contributes to the need that children want and yearn positive, loving relationships with the people closest to them and inevitably wellbeing could have increased due to having these 'positive' feelings for the anticipation of what is to be experienced in the not too distant future.

4.3.4 Term 1- week 4

During the week of 2nd-9th December Sue went in a negative trend in terms of her wellbeing (see figure 2). This was the most dramatic negative trend, within the term, with a decrease of 14%. However, as the lowest point of wellbeing was on 9th December for the term, Sue was successful in **all** of the body movements for resisted crawl and cat (see appendix 14 for resisted crawl and cat activities results), showing that there was no impact from wellbeing on these physical activity movements. However, during this week it was noted from OT observations (semi-structured) and free notes that she was particularly anxious and worried about exams, emphasising the lack of focus and concentration throughout her OT activities. Additionally, she was looking forward to seeing her Mother at the weekend. Throughout the week, some excerpts from OT notes indicated that Sue was:

"Not fully focused, worried about messing up an exam from yesterday" (OT notes cat 8/12/16, week 4, term 1).

"Better focused but still worried about exams, feeling exam pressure" (OT notes resisted crawl 8/12/16, week 4, term1).

"Straight on task, however wanted to be revising for next exam" (OT notes cat 8/12/16, week 4, term 1).

“Worried about yesterday’s exams, felt like she had got some wrong, feeling anxious and worried about future exams” (OT notes resisted crawl 9/12/16, week 4, term 1).

These comments conflict with Westby and Robinson’s (2014) viewpoints who believed that developing ‘theory of the mind’ (ability to reflect on one’s own thoughts and feelings, and the thoughts and feelings of others) will increase children’s motivation, meaning, repetition, self-regulation, and abstract thinking to cope with everyday life (Bloom, 2004). Yet, exam pressures and worries inflicted on Sue’s wellbeing, hindering Sue’s confidence, self-esteem (Cassady, 2002) abstract thinking, and coping mechanisms. As Shankar and Park (2016) implied, exam worries can lower self-esteem and decrease life satisfaction in oneself, thus predisposing children to stress. However, as Sue was successful in **all** of the body movements for resisted crawl and cat at the lowest point of recorded wellbeing, it could be assumed that Sue having dyspraxia could have heightened Sue’s stress levels and exams anxieties. As Colley (2000) highlighted, children with dyspraxia may often have a very cautious, fearful or anxious temperament, as Sue has demonstrated by having exam worries. This temperament trait is known as behavioural inhibition (BI) and affects a child’s behaviour and attention skills. Jones, (2005) supported Colley’s (2000) viewpoint by adding that children with dyspraxia find the ability to take on challenges, learn new skills and embark on pressured tasks, a fearful situation, leading to negative dispositions. This anxious temperament is shown by the excerpts from observational field notes that state:

“I think I did rubbish. My mum said not to worry about it” (Free notes 9/12/16, week 4, term 1).

“So looking forward to seeing my Mum, can’t wait to see her,” (Free notes 9/12/16, week 4, term 1).

These comments could be a contributing factor to the reason why wellbeing was low, due to Sue wanting to seek attention from her mother. As Rees et al. (2010) suggested, children who feel like they are distanced from their families tend to believe their efforts will lead to failure and have poor self-esteem. Goswami (2011) strengthens this viewpoint, which highlights that the strongest contributor to low wellbeing is where children experience weak and separated relationships with their families or carers. Likewise, this could be a detrimental factor to Sue, because she is at boarding school from Monday to Friday and does not have any one to one contact during the week with

her mother, which could potentially affect her confidence and self-esteem. Schaverien (2015) enhanced this viewpoint by implying that boarding schools break healthy attachments with parents. As soon as the child and parents are separated, a child has to adjust to the fact that privacy is no longer guaranteed and the lack of consolation of love and affection. Simmons (2015) highlighted that this can further inhibit a child with dyspraxia, due to the difficulty of managing their emotions ineffectively. However, Sue did have some reassurance from her mother, due to feeling low about her exam performance, when she was to be reunited with her again by receiving affection and talking about what has been going on in Sue's life. As Ryan et al. (2008) highlights, having physical affection (cuddles, one to one contact) and attention from a caregiver uplifts children's sense of security and wellness, enhancing the ability to take on challenges and to achieve personal goals.

4.4 Term 2

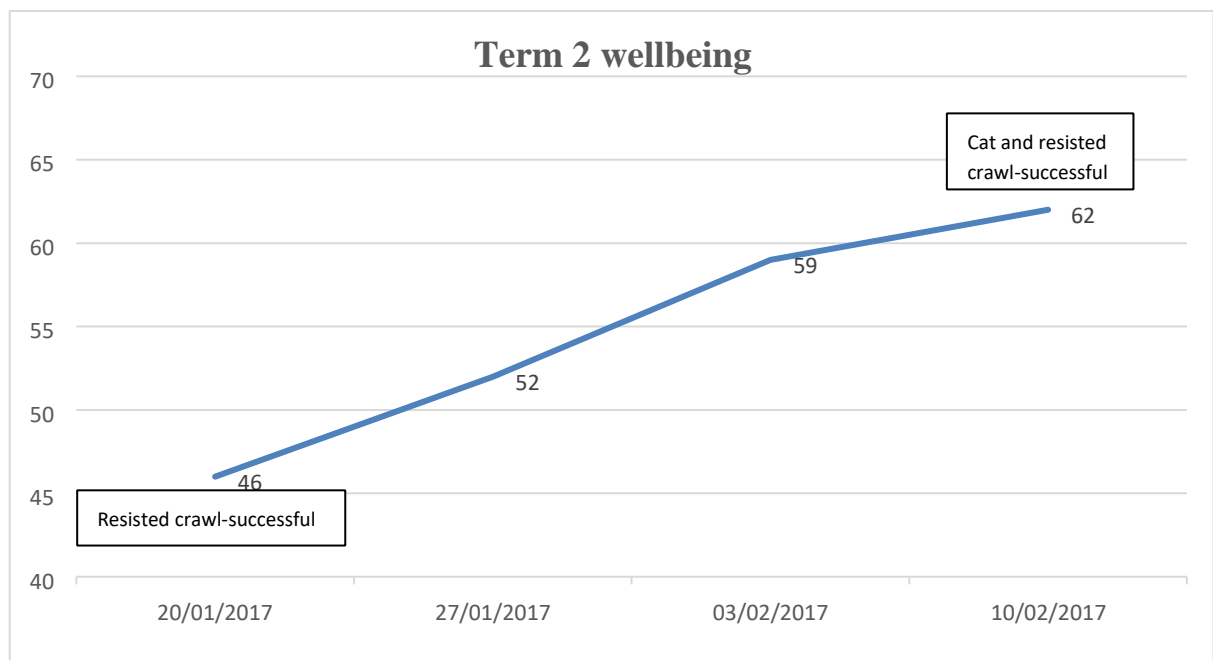


Figure 3- illustrates Sue's overall average wellbeing for Term 2. Term 2 is the second term of data collection and ran from 20th January 2017 until 10th February 2017.

The graph illustrates that there is a positive trend in Sue's wellbeing, from 20th January to 10th February 2017 with an increase of 12%. The most significant increase by 7% was between 27th January to 10th February. Also, the graph illustrates that at the highest

wellbeing point on 10th February 2017 Sue was successful in **all** of the body movements for resisted crawl and cat. At the lowest wellbeing point on 20th January, 2017 Sue was successful in **all** of the body movements for the resisted crawl. At the lowest wellbeing point on 20th January 2017 Sue was successful and unsuccessful in the following body movements for the cat movements (see table 3):

Successful	Unsuccessful
<p>Head:</p> <ul style="list-style-type: none"> • drop heads smoothly, • looks down between knees, □ keep head down whilst maintain stillness for five seconds, • head back up to look forwards, 	<p>Body</p> <p>□ arching of the back was not supporting posture of the body nor muscle flexibility.</p>
<p>Arms/hands-</p> <p>arms straight, hands flat, thumbs out.</p>	
<p>Body:</p> <p>□ four square position to support core stability.</p>	
<p>Legs/feet</p> <p>□ keep knees still, □ keep feet still.</p>	

Table 3- shows the successful and unsuccessful aspects of the cat movement on 20th January. (See appendix 14 for resisted crawl and cat results).

4.4.1 Term 2- week 1

During the week of the 20th – 27th January Sue went in a positive direction in terms of her wellbeing (see figure 3), but Sue struggled with head movements, arms/hand movements and body movements for the cat over a 2 day period at the beginning of term (see table 3). Also, she struggled with all body movements, aspects of head and legs/feet for resisted crawl over a 3 day period at the beginning of term (see appendix 15).

It was noted from the OT observations (semi-structured) that she was particularly tired from travelling back to school after a holiday period, lacked energy and demotivated and she had to be returned to being on task during the physical activity session. The notes from the OT (semi-structured) observations evidenced the following quotes and statements from the beginning of term on Monday 16/01/17, Tuesday 17/01/17 and Wednesday 18/01/17 for the resisted crawl. The following quotes indicate Sue's tiredness and demotivation.

[Sue] "lacked motivation and was tired. Laid on the floor, just wanted to relax."
[Additionally on this day, it was evidenced that Sue], "did not have the energy (OT notes resisted crawl 16/01/17, week 1, term 2).

"Very tired from travelling back to school" (OT notes cat 16/01/17, week 1, term 2).

"Had to be shown and explained to a few times," (OT notes resisted crawl 17/01/17, week 1, term 2) [even though she was familiar from completing this everyday throughout the whole of term 1].

As Bradshaw (2016) proposed tiredness has disadvantageous effects on children's health, emotions, memory and academic potential which are all significant aspects for successful schooling. Skinner and Zimmer-Gembeck (2016) enhances Bradshaw's (2016) views that state that children who are involved in hectic and busy schedules every day can experience weakness, lack of motivation and start to develop mood swings. Parents need to moderate children's activities during non-school times and make sure that their children are not 'burning out,' which may have detrimental effects on children's confidence and self-esteem. Miller and Zittleman (2010) implies that extra activities outside of the school day do enhance children's holistic development, however children

need a balance between mental and physical activity with the ability to practise mindfulness and to appreciate calm and quiet times, which aid concentration, memory functioning and overall academia

(Miller and Zittleman, 2010). Additionally, due to Sue being diagnosed with dyspraxia, Abdullah (2012) highlights that some children with dyspraxia have difficulties with working memory and is quite common for these children to forget what they are doing in the middle of a task and may have difficulty following instructions. This might explain why she forgot the movement and needed to be shown it, even though she had completed it every day in term one. Repetitive, clear and concise instructions during OT sessions are imperative to a child's occupational therapy progression.

It was noted from OT notes that Sue was lacking in motivation and disengaged. On Tuesday (16/01/17, week 1, term 2), Sue "lacked energy and motivation, was sluggish and disengaged" and on Wednesday (17/01/17, week 1, term 2), Sue's body was "a little sluggish and weak and finding it hard to concentrate this week."

Gray, et al. (2011) suggested that school is a key area of children's lives where experiences vary greatly and negative experiences have a significant impact on wellbeing. This variance of wellbeing going up and down was particularly evident during this week where the lowest point of her overall wellbeing is recorded after a holiday period, followed by a positive trend until the end of term. Golding et al. (2015) proposed it is crucial to measure children's wellbeing in schools to give guidance and support when necessary and to diminish any potential mental health issues that could arise in the future. Blankenship (2008) advised that as Sue was lacking in energy, motivation, not able to concentrate; inevitably this will have detrimental influences on her wellbeing and affect the ability to participate in the physical activities of OT. There is a strong need to implement support when wellbeing outcomes are low and continually enhance positivity throughout OT sessions and through school life. This enhances the main focus of the study to enrich the purpose of the reasoning as to why Sue receives occupational therapy invariably, especially with Sue having dyspraxia. More importantly, Coulter, et al. (2015) recommends that the lack of motivation and concentration could have accentuated due to Sue's dyspraxic needs as children may experience difficulties with perception, processing, and motor planning which impacts on their concentration skills. Nevertheless, Blankenship (2008) highlights that children's physical development is

hindered and progress is slower when psychological barriers are imposed; enforcing the lack of motivation, concentration issues and lack of energy, which could influence a negative mental mindset towards participation, especially with physical activities of OT. The OT (semi-structured) observations for cat evidenced the following quotes and statements from the beginning of term on Monday 16/01/17 and Tuesday 17/01/17:

[Sue was] “a little twitchy”; “did not have the energy. Very tired from travelling back to school” (OT notes Monday 16/01/17, week 1, term 2).

“Had to be shown and explained to a few times; “laid on the floor, just wanted to relax” (OT notes Tuesday 17/01/17, week 1, term 2).

These comments align with Golding et al. (2015) views, who suggests that children leading very busy lives, may feel exhausted, experience drops in energy levels and undoubtedly will not be fully focused or on task. The comment, “laid on the floor, just wanted to relax,” supports Skinner and Zimmer-Gembeck (2016) viewpoint who explains that children need periods throughout the day to reconnect with themselves and develop a sense of wellness and calmness, this will enhance future participation and re-energise Sue to support future successes. Once more, it is evident that the lack of energy and physical performance appears to be worsened on a Monday after being home with Mum from the evidence obtained for the resisted crawl exercise in term 2 and for the cat activity in term 1 and term 2, that show similarities within the comments made. Therefore, it was assumed that this has a strong impact on Sue’s physical performance during Sue’s occupational therapy development. Excerpts from Sue’s OT notes state that on Tuesday (17/01/17, week 1, term 2):

[Sue’s]“body composition was weak and kept stopping. Lacked energy”; (OT notes Tuesday 17/01/17, week 1, term 2)

“Lacked motivation and was sluggish”; “very tired and lacked motivation (OT notes Tuesday 17/01/17, week 1, term 2)

Had to be shown and explained to a few times.” (OT notes Tuesday 17/01/17, week 1, term 2)

These comments show physical relevance and significance to the unsuccessful body movements for the cat exercise, initiating the lack of energy overall and showing a

connection between physical performance and energy levels. Shephard (1996) proposes that when energy levels are low; tiredness, demotivation and body weakness, children will show indications of low self-esteem and undoubtedly will not be fulfilling optimal results. Duncan (2011) enhances Shephard's (1996) views by implying that children with reduced physical skills, may experience a less positive global self-worth (a person's overall depiction of themselves) than a typically developing child and therefore may have reduced energy levels due to the lack of self-efficacy and perseverance. Bandura and Locke (2003) strengthens this viewpoint, by adding that self- efficacy determines effort, persistence, and performance in physical activity, which Brook (2013) reiterates, for a child to progress to their full potential throughout occupational therapy, a child needs emotional support just as much as the physical aspects. Knowingly, it is therefore imperative to be mindful of addressing both physical issues and self-worth throughout therapy.

Additionally, during this term, was when the lowest point of overall wellbeing was recorded. It was assumed that this was in connection with her lack of energy, motivation, and performance ability as previously highlighted from the comments stated. Interestingly, this associates with the resisted crawl exercise comments and therefore shows that other factors beyond the wellbeing scale measures, contribute to low wellbeing such as her lack of energy, motivation, performance ability, tiredness, which all then had an impact on her ability to complete the physical activities of OT. As there was a positive trend in wellbeing during this term and Sue had settled back into school, it was apparent from OT notes that Sue was becoming more focused and self-assured as the week progressed. Excerpts from OT notes from this week, show indications of Sue becoming more focused and motivated.

[Sue is], "more focused. Still lacking energy, however, more willing to have a go and participate" (OT notes resisted crawl 18/01/17, week 1, term 2).

"More motivated and enthusiastic to work," "still a little antsy. Body fidgety and lacked concentration, however, seemed happier to chat" (OT notes cat 19/01/17, week 1, term 2).

"Full of zest and vibrant, excited about seeing Mum and more motivated and focused" (OT notes resisted crawl 20/01/17, week 1, term 2).

This shows that there was an impact of wellbeing on Sue's physical activities of OT, in particular to energy levels and motivation increasing and looking forward to seeing her Mother as shown in term 1. As Godman (2014) recommended, physical activity can help significantly with maintaining mental wellbeing. The endorphins that the brain releases during exercise help to improve mood, energy levels, and motivation. Together, these positive effects help to improve self-confidence and resilience over time. The comment "looking forward to seeing her Mother" differs with Bowlby's (1969) ideas who believed that the relationship between parents and children need to be consistent and nurtured to ensure strong, resilient children that inevitably become secure adults because of the strong attachments and bonds formed from childhood. Moreover, looking forward to seeing her mother, has heightened wellbeing from the beginning of the week, where she was struggling with the physical activities of OT, due to not having that consistent, everyday contact, thus provoking happiness to see her Mum again.

4.4.2- Term 2- week 2

During the week of the 27th January-3rd, February Sue continued the positive direction in terms of her wellbeing. This could be assumed that she was looking forward to seeing family and friends and experiencing a Chinese New Year lunch, impacting on the physical activities of OT. Excerpts from OT notes indicate how Sue was looking forward to future events and seeing family. These are indicated by Sue stating:

"Full of zest and vibrant, excited about having a Chinese lunch and seeing Mum, more motivated and focused" (OT notes resisted crawl 3/02/17, week 2, term 2).

"Very chatty, seemed happy and looking forward to Chinese New Year lunch. "Can't wait to eat and share prawn crackers with my friends," "seeing mum tomorrow and going shopping for a dress" (OT notes cat 3/02/17, week 2, term 2).

"Looking forward to helping auntie at the weekend to look after her cousins" (OT notes resisted crawl 3/02/17, week 2, term 2).

These comments align with Fortune (2000) who believed that children need positive, steady, relationships with their friends. Family and friends are fundamental, but more important than a particular family structure or a specific amount of friends are good, quality relationships that are loving, supportive, respectful and that create a balance

between safety and autonomy (Ryan, et al., 2008), stimulating a child's high level of wellbeing.

4.4.3- Term 2- week 3

During the week of the 3rd-10th February Sue continued the positive direction in terms of her wellbeing to the end of term (see figure 3). This could be assumed that the start of the holiday was beginning at the end of this week and therefore Sue was looking forward to engaging with activities and spending time with family, impacting on the physical activities of OT. Excerpts from OT notes that week show the following indications:

"Looking forward to helping her auntie at the weekend to look after her cousins," (OT notes resisted crawl 9/2/17, week 3, term 2),

"Very motivated, looking forward to seeing Mum and spending time with auntie" (OT notes cat 10/2/17, week 3, term 2).

As Howard and Walton (2015) reports, children's closeness to mothers has shown to have independent contributions to children's happiness, life satisfaction, and psychological distresses. Furthermore as Stinnett and DeFrain (1985) proposes, children who have a sense of 'togetherness' with their families, develops a strong sense of personal identity and belonging within, develop their self-confidence and having the security within to develop friendships and acquaintances outside of the family unit. More excerpts from OT notes that week show the following indications of Sue's rapport with the researcher and the importance of her relationship with her Mother:

[Sue said] "can't wait to paint my bedroom in half term. Pink and blue borders, I'm choosing" (OT notes resisted crawl 9/2/17, week 3, term 2).

"Looking forward to watching Wicked in London on Sunday, have you seen it?" researcher replies, "yes, three times, it's fantastic." Child says, "hope it is not not scary, hahaha," (OT notes resisted crawl 9/2/17, week 3, term 2).

"My mum is going to be pleased with my marks in maths. My extra maths lessons are really helping." (OT notes cat 10/2/17 week 3, term 2).

These comments show that Sue has built a good rapport with the researcher by conversing in a confident manner. As Woodman et al. (2010) emphasised, building

positive relationships between Sue and the researcher, provides supportive and nurturing experiences for Sue to feel at ease and gives her the confidence to flourish and enhance feelings of wellbeing throughout the physical aspects of OT. Frolek and Chandler (2014) supported Woodman et al. (2010) viewpoints by stating that the sense of security that Sue receives, can ensure that Sue feels worthy and aims to achieve to her full, physical potential.

Throughout this term there is a positive trend in wellbeing from the lowest overall wellbeing being recorded, with an increase of 12% (see figure 3). It is important to note that this could have been supported by Sue's evident progression in netball skills and ripsticking that was observed on Friday lunchtimes (20th January- 3rd February 2017), implying that her physical activities are improving her confidence and coordination skills that are reflected in her progression within PE, especially netball. On Friday 20th January, it was apparent that Sue wanted alone time, reinforced with when the lowest overall wellbeing was recorded. An excerpt from free notes on 20/01/17 indicates the following:

“Researcher says, “Do you want to play a game of your choice?” Sue replies, “no thanks, I’m going to go in and read my book.” Child then walks towards the main building, enters the school. Walks to the common room. Gets book out of her trunk. Sits on the sofa, feet up and curled up and engages with the book until the end of lunch break.” (Free notes 20/01/17)

As Woodman et al. (2010) proposes low confidence (lack of trust in oneself) and wellbeing can be a result of many factors. However, children who have a disability which impacts upon their performance in daily life are more likely to have low confidence and may withdraw from others as a result of this. However, as Maitland (2014) suggests, being in solitary situations gives children the ability to self-preserve and protect one-self when wellbeing is low.

4.4.4.1- Term 2- week 3

Two weeks later (3rd February), it is apparent that Sue had become even more confident and willing to partake in the physical aspects of netball, which could be implied that more practise and more physical exertion correlated with increased confidence, self-esteem and perseverance has impacted on the physical aspects of OT, however is willing to

watch friends ripstick but still has not participated. An excerpt from the free notes on 3/2/17 indicates the following:

“Sue leaves dining hall with one of her friends. Walk towards sports hall and enters sports hall. Both children walk upstairs to the equipment and Sue gets a ball. “Fancy doing some chest passing with me?” The friend replies, “yes sure”. Sue says, “ok you stand in front of me, go back a bit, go back a bit. Yep, there is ok. Right, remember to hold the ball with both hands where your chest is.” Sue chest passes the ball to the friend. The friend chest passes it back. Sue chest passes it back x 10 to each other. Sue says, “make sure, you step forward into the pass.” Friend said, “ok, ive had enough now, im going on my ripstick, want to come?” “Yes ok, ill watch you.” Sue takes ball back and follows friend to the ripstick area. Watches friend get ready, then watches friend on ripstick.” (Free notes 3/2/17, week 3, term 2).

These comments align with Harold et al. (2013) who recommended that the development of fundamental movement skills in children’s PE needs to be nurtured because they are important for Sue’s physical development, long-term health, and wellbeing. Physical development and movement is about experiencing and developing a range of fundamental movement skills that will improve co-ordination, locomotion, control, balance, and manipulation. In addition, physical development helps children gain confidence and self-esteem and enables them to feel the benefits of being healthy and active (Addy, 2013). Sue has shown that she now has the ability to give instructions, to understand movement and then to watch others, which has been a positive achievement for her.

4.4.5- Term 2- week 4

The last Friday of the term (10th February), Sue felt confident to partake with ripstick and felt good about herself for engaging with this. This shows that Sue had increased her confidence and resilience over the term which aided her physical capabilities. An excerpt from free notes on 10/2/17, week 4, term 2, indicates the following:

“Sees one of her friends, approaches, asks, “What are you doing?” Child replies “going to go on my ripstick, are you coming?” Sue replies “yeah, ok”. Both walk to the ripstick area. Friend gets ready. Sue watches. Researcher asks “would you like to go on your ripstick?” Sue says, “hmmmm, ok then.” Researcher says, “I can support you on it if you like?” Child replies, “no its ok, I’ll be fine”. Whilst holding on to the wall, she puts left foot at

the front then placed the right foot to push off with the back foot , then feet were in the middle of the ripstick, lost balance and fell off, attempted again, lost balance fell off, attempted again, lost balance fell off, attempted again and then used back foot to wriggle the board. Slight momentum going, then feet fell off. Smiled and looked around, approached a wall and attempted again. Pushed off with the back foot and got some momentum going for a few seconds then lost balance. Got off and put the ripstick back. Researcher said, “well done, what a great effort”. Sue said, “thanks, but I need to get better” (Free notes 10/2/17, week 4, term 2).

These comments align with Bonell, et al. (2013) ideas who highlighted that a child's confidence is accelerated when adults place their trust, and belief in a child; this is why the researcher praised Sue for such a great effort, that had not been seen in previous terms. A child will then mirror internally those beliefs. Dobson (2015) adds that the child develops her own self-confidence, faith, belief, and trust are imperative. As Sue developed selfconfidence, adult trust enhanced opportunities and encouraged Sue to take risks, express thoughts and feelings and invest in her physical capabilities and development (Bonell, et al., 2013). Godman (2014) highlighted that when children start to see physical levels increase and improvement in their bodies, it fundamentally boosts self-esteem. The sense of achievement children can get from learning new skills and achieving their goals can also help children feel better about themselves and uplift moods (Bloch, 2015).

4.5 Term 3

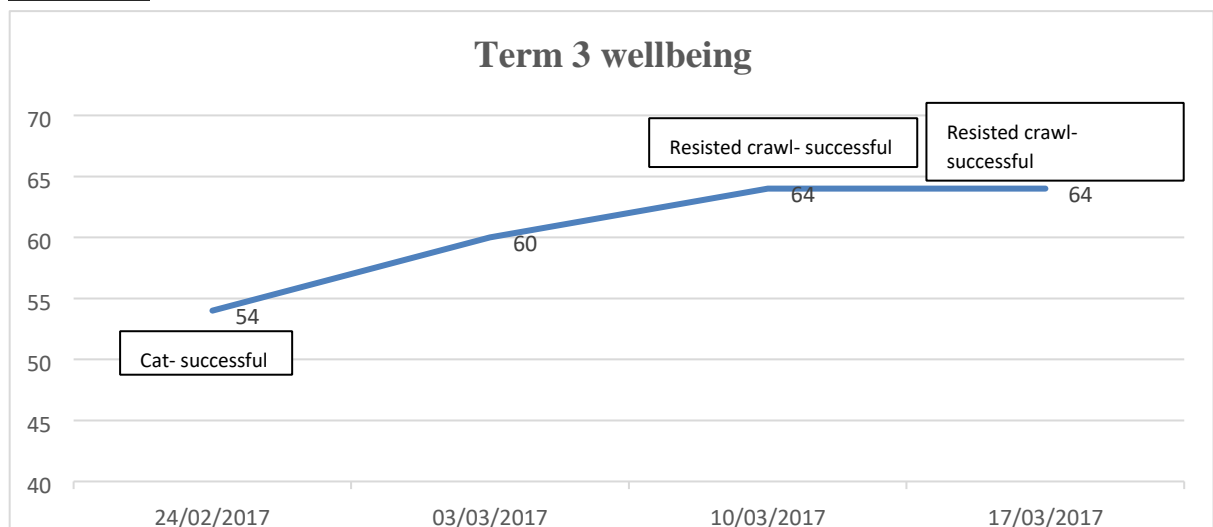


Figure 4- illustrates Sue’s overall average wellbeing for Term 3. Term 3 is the third term of data collection and ran from 27th January 2017 until 3rd February 2017.

The graph illustrates that there is a positive trend in Sue’s wellbeing, from 24th February to 17th March 2017 with an increase of 10%. The most significant increase by 6% was between 24th February to 17th March. Also, the graph illustrates that at the lowest wellbeing point on 24th February Sue was successful in all of the body movements for cat, whilst for **resisted crawl** (see table 6) she was successful and unsuccessful. Furthermore, the graph illustrates that at the highest wellbeing points on 10th March and 17th March Sue was successful in **all** of the body movements for resisted crawl whilst for **cat** on 10th March (see table 4) and 17th March (see table 5) she was successful and unsuccessful in the following ways (see table 3):

Successful	Unsuccessful
<p>Arms/hands:</p> <p>arms straight, hands flat, thumbs out,</p>	<p>Head:</p> <ul style="list-style-type: none"> • drop head smoothly, • look down between knees, □ keep head down whilst maintain stillness for five seconds, • head back up to look forwards.
<p>Body:</p> <ul style="list-style-type: none"> • ensure arching of the back supports posture of the body, • four square position needed to support core stability, 	
<p>Legs/feet-</p> <p>□ keep knees still, □ keep feet still.</p>	

Table 4- shows the successful and unsuccessful aspects of the cat movement on 10th March

Successful	Unsuccessful
<p data-bbox="277 1451 759 1803">Head- drop head smoothly, look down between knees, keep head down whilst maintain stillness for five seconds, head back up to look forwards,</p>	<p data-bbox="933 1451 1169 1576">Legs/feet- □ keep feet still.</p>

<p>Arms/hands:</p> <p>arms straight, hands flat, thumbs out,</p>	
<p>Body:-</p> <ul style="list-style-type: none"> • ensure arching of the back supports posture of the body, • four square position needed to support core stability, 	
<p>Legs/feet</p> <p><input type="checkbox"/> keep knees still.</p>	
<p>Successful</p>	<p>Unsuccessful</p>
<p>Head-</p> <p>drop head smoothly, look down between knees, keep head down whilst maintain stillness for five seconds, head back up to look forwards,</p>	<p>Legs/feet-</p> <p><input type="checkbox"/> keep feet still.</p>
<p>Arms/hands:</p> <p>arms straight, hands flat, thumbs out,</p>	

<p>Body:-</p> <ul style="list-style-type: none"> • ensure arching of the back supports posture of the body, • four square position needed to support core stability,
<p>Legs/feet</p> <ul style="list-style-type: none"> ☐ keep knees still.

Table 5- shows the successful and unsuccessful aspects of the cat movement on 17th March.

Successful	Unsuccessful
<p>Head</p> <p>head up, look forward</p>	<p>Head on</p> <p>☐ eyes maintain focal point.</p>
<p>Arms/hands</p> <p>hands flat and under shoulders, fingers pointing forwards</p>	
<p>Body</p> <p>☐ body helps to keep momentum of the crawl to move forwards and backwards,</p>	

<p>Legs/feet</p> <p><input type="checkbox"/> knees under hips, feet flat and slide along the floor during the exercise.</p>	
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Table 6- shows the successful and unsuccessful aspects of the resisted crawl movement on 24th February.

(See also appendix 14 for full results of all the resisted crawl and cat).

4.5.1.1 Term 3

If the resisted crawl was examined at the highest points of wellbeing, it would appear that there is no impact from wellbeing on these physical activity movements, however, she was unsuccessful for cat with all of the head movements and aspects of leg/feet (see table 4). Yet, at the lowest point of wellbeing Sue was successful in all of the body movements for cat (see table 5), but was unsuccessful with the aspects of the head for resisted crawl (eyes maintain on focal point), whilst being successful for the rest of the body movements (see table 6). However, it is important to note that Sue was not able to complete the resisted crawl and the cat successfully throughout the whole term, but her wellbeing did go in one positive direction (see figure 4 and see appendix 14).

4.5.2 Term 3- week 1

During the week of the 24th February-3rd, March Sue’s wellbeing went in a positive direction (see figure 4), but Sue struggled with aspects of head movements, arms/hand movements and body movements for resisted crawl over a 2 day period at the beginning of the term. Also, she struggled with aspects of head movements and aspects of the body over a 2 day period at the beginning of term (see appendix 15 for successful and unsuccessful points of cat and resisted crawl). It was noted from the OT observations (semi-structured) that she was particularly tired from travelling back to school after a holiday period, lacked energy and was demotivated, and she had to be returned to being on task during the physical activity session. The notes from the OT (semi-

structured) observations evidenced the following quotes and statements from the beginning of term on Monday 20/02/17, Tuesday 21/02/17 for the resisted crawl. On Monday and Tuesday Sue gave a number of indications that she:

“[was] very tired. Sad to be back to school. Really missing Mum.” (OT notes for resisted crawl 20/02/17, week 1, term 3).

“Can’t wait for the weekend, just want a cuddle from Mum.” (OT notes resisted crawl 20/02/17, week 1, term 3).

“[was] missing Mum after holiday with her. I’m going to call Mum tonight, I want to talk to her.” (OT notes resisted crawl 21/02/17, week 1, term 3).

It is apparent from these comments, that Sue has a strong, emotional need towards her mother and is increased when returning back to school from a holiday or any time spent together. This need for her mother could be a cause to the unsuccessful body parts and movements at the beginning of the term. Holt-Lunstad et al. (2015) highlights that relationship health within a family should be given a considerable amount of attention as this is *vital* for physical health and development. Furthermore, when children and family holiday together, the holiday experience triggers wellbeing neurochemicals including opioids, oxytocin, and dopamine. They reduce stress and activate warm, generous feelings towards each other, which supports family members to ‘emotionally refuel’. Children are able to explore and play, which is a vital resource for living life well, this is a foundation for when children reach adulthood to support healthy mental wellbeing (Carr, 2011).

Urani (2003) suggests that having these warm, positive feelings in motion, then returning back to school with the feelings of sadness and yearning the attention from her Mother, poses a purposeful reasoning as to why Sue has these emotional feelings. Symonds (2015) implies that anxious feelings are normal and expected during times of transition or change, in particular, when children going back to school. This transition can be stressful and disruptive for the entire family. Anxious children worry about many different schoolrelated issues upon returning, such as teachers, friends, fitting in, and/or being away from their parents. As Sue is a weekly boarder within the school and is reunited with her Mother at weekends, Schaverien (2015) highlights that children can suffer from separation anxiety, or anxiety regarding separation from home or from

people to whom the individual has a strong emotional attachment. Whilst attending a boarding school, a child cannot receive the same love and attention from a teacher or a matron that is naturally sourced from a parent, and therefore can have detrimental effects on children's ability to socialise with others and overall academia due to psychological hindrances. Such ideas as discussed above are illustrated in the next excerpt from the observation field notes.

"On Tuesday Sue said, "had such a busy half term, got to see so many people. Roll on the Easter holidays." "I'm still tired, I just want to be at home and playing in the park." Also, "still tired from holiday. "I'm so tired, I just want to get in my p.j's and go to sleep" (OT notes resisted crawl 22/2/17, week 1, term 3).

These comments may potentially assume that the unsuccessful body movements were due to Sue's tiredness from the school holiday. Holder (2012) suggests that children who experience high levels of tiredness, experience emotional behaviours; feeling low, wanting comfort (cuddles) from parents and therefore Skinner and Zimmer-Gembeck (2016) emphasises that children who are lacking in sleep and experiencing tiredness exhibits lower self-esteem. Moreover, Willard (2014) highlights that children who are displaying signs of anxiousness, such as wanting to be at home, may, in fact, need more sleep than those with better psychological functioning. Urani (2003) supports Willard's (2014) viewpoint by adding that children who are 'homesick' can become demotivated; lack drive, discontentment and lack enthusiasm. Holder (2012) recommends that these children need to have more energy in the schooling day to reduce the levels of tiredness. However, Thorn

(2003) implies that the constant readjustments (of school- to- home; home- to- school) for Sue, can make her feel more discontented and anxious; and heighten emotional feelings, due to the changeability of contact, hence the flux in the successful completion of the physical activities of OT.

Additionally, at the end of term 2 to the beginning of term 3 where Sue embarks on a 2 week holiday, Sue's wellbeing dropped by 8%, starting the term with particularly low wellbeing (see figure 4). As previously discussed, there have been connections made with the unsuccessful body parts and the reasoning to these; findings enhanced by Sue having particularly low wellbeing. However, as wellbeing was not at its lowest throughout the

study, Sue stating “roll on the Easter holidays” could be a contributing factor to her having an event to look forward to in the not too distant future. As Rees (2012) suggests, children need opportunities to take part in positive activities/events to thrive and flourish emotionally, which as Holder (2012) agrees boosts children’s feel-good factors and increases life’s satisfaction.

The notes from the OT (semi-structured) observations evidenced the following quotes and statements from the beginning of term on Monday (20/01/17) and Tuesday (21/01/17) that show indications that Sue was feeling low:

“Very tired. Sad to be back to school. Really missing Mum. Said, “can’t wait for the weekend, just want a cuddle from Mum” (OT notes resisted crawl 20/01/17, week 1, term 3).

“Missing Mum after holiday with her. I’m going to call Mum tonight, I want to talk to her” (OT notes cat 21/01/17, week 1, term 3).

Interestingly, these comments mimic the comments from the resisted crawl exercise in the same term 3. Therefore, it is evident that the continued importance of Mum and the strong, emotional connection with her, contributes significantly to Sue’s wellbeing and to the unsuccessful body movements in both the resisted crawl and cat activities. In accordance with these feelings towards her Mum, Engler (2006) implies that the need for a cuddle and communication can be associated with separation anxiety; craving the warmth, closeness, safeness, and love from a parent. These anxious feelings can contribute to children feeling tired, sad and may lower morale and wellbeing. The following excerpt from Sue’s OT notes on 21/01/17 show similarities in the behaviours that occur with Sue with regards to yearning home life, as previously discussed. Sue indicates that she:

“Had such a busy half term, got to see so many people. Roll on the Easter holidays.” “I’m still tired, I just want to be at home and playing in the park.” [Also], “still tired from holiday. “I’m so tired, I just want to get in my pj’s and go to sleep” (OT notes resisted crawl 21/01/17, week 1, term 3).

Once more, these comments are similar to the comments from the resisted crawl exercise. Subsequently, it is evident that the unsuccessful body movements were due to

Sue's tiredness from the school holiday, which contributes significantly to Sue's wellbeing and to the unsuccessful body movements in both the resisted crawl and cat activities. In addition from the previous research that has been stated, the comment "I'm so tired, I just want to get in my p.j's and go to sleep," (Sue's OT notes from resisted crawl on 21/01/17, week 1, term 3) suggests that Sue was desiring her own belongings, when she is boarding she has limited timings as to when she can relax in her pj's. Engler (2006) implies that when children have been in their home environment with familiar people and routines, they feel secure and relaxed. Yet, as Schaverien (2015) highlights, upon the return to school, children can miss their possessions and home in general, displaying emotions of loneliness or sadness, thus feeling insecure and diffident.

As there was a positive trend in wellbeing during this term and Sue had settled back into school, it was apparent from OT notes that Sue was becoming more focused and selfconfident as the week progressed. An excerpt from OT notes on 23/01/17 indicates that Sue was:

"Very motivated, straight on task. Had a good night sleep and back on task. Yes, I did it." [This shows that Sue was able to recognise her own success.] Researcher replied, "yes, good core and concentration and you crawled for 10 metres again. Well done" (OT notes resisted crawl 23/01/17, week 1, term 3).

As the World Happiness report (2015) suggested, giving positive praise and encouragement to children, encourages them to strive and succeed to their full potential, knowing they have the support and guidance from trusted people to help them achieve their goals and achievements.

4.5.3-Term 3- week 2

During the week of the 3rd -10th March Sue continued the positive direction in terms of her wellbeing. This could be assumed that she was looking forward to seeing family and friends, experiencing an event and feeling good about progressing in OT, impacting on the physical activities of OT. Some excerpts from OT notes on 9/3/17 indicate that Sue's:

"Overall core and strength of body have improved since November, so excited about the weekend." "Oooohh why is that" asked the researcher, "I'm trying on bridesmaid dresses

for my aunties wedding, never been a bridesmaid before” (OT notes of cat 9/3/17, week 2, term 3)

“Fully focused, Really happy. Showed researcher photo of her in dress, “look miss, that’s me in the dress.” Researcher replies, “wow, you look beautiful.” “Thanks miss, can’t wait to wear it” (OT notes resisted crawl 9/3/17, week 2, term 3).

These comments align with Suthakaran (2012), who highlighted Maslow’s self-actualization theoretical position, detailing that teachers can help children become goal setters, learn to meet their own safety and personal needs and to recognize their own self-worth by building a positive environment to flourish in. These basic needs must be met before education can take place in school. Therefore, as Koludrović and Ercegovac, (2015) strengthens Suthakaran (2012) viewpoints, that when Sue and the researcher meet for the implementation of OT, general discussions about Sue’s life and what there is to look forward to in the future are sought, thus promoting longevity and positive wellbeing for a happy childhood.

4.5.4- Term 3- week 3

During the week of 10th-17th March Sue continued the positive direction towards the end of the term in terms of her wellbeing (see figure 4). This could be assumed that she was to be reunited with her Mother again and looking forward to a long holiday with family. Also, it was apparent that Sue had become confident and progressed in her physical activities during her lunchtime breaks over the course of the study, which could have been supported by the OT that she had received every morning break time. Excerpts from OT notes indicate that Sue had:

“Lots of energy, happy, excited about the Easter holidays” (OT notes resisted crawl 15/3/17, week 3, term 3).

“Roll on the Easter holidays, can’t wait to spend time with Mum and auntie’s and cousins” (OT notes cat 16/3/17, week 3, term 3).

These comments could imply that knowing the holiday period is a future certainty, gives Sue a sense of security, which can enhance children’s attachments to their caregivers. An excerpt from free notes on 17/3/17 shows:

“Hey, netball, yes?” says to friend. Both walk towards sports hall, other friend catches up. Sue says, “you coming to play a bit netball?” “yes ill come” friend replies, continue to walk and then enters sports hall. All three children walk upstairs to the equipment and Sue gets a ball. “chest passing again, yes?” One friend replies, “yes sure”. Sue says, “ok you stand in front of me, do you want to watch? (referring to other child) “go back a bit, go back a bit.” Child replies, “actually, ill just chill.” “Yep, there is ok. Right, remember to hold the ball with both hands where your chest is.” Sue chest passes the ball to the friend. Says to other friend, “want to go next?” Child replies, “no its ok.” The friend chest passes it back. Sue chest passes it back x 5 to each other. Friend says, “make sure, you step forward into the pass.” Sue says, “yes, like this” (stepping forward into the chest pass.) Sue then says to friend who she is playing with “make sure you step forward into the pass.” Continues x10, continues for 10 minutes. “Right, hold the ball with both hands at chest height and spread fingers around the side of the ball and thumbs towards the back, with elbows bent and tucked in.” (Free notes 17/3/17, week 3, term 3).

This shows that Sue has the confidence to initiate playing netball with friends, and to take the lead with motivation and effort; the perseverance to teach friends knowledge and skills that she has acquired and initiates being physically active with her friends. These comments support Adi and Janmohamed (2007) viewpoint who believed that children enhancing positive emotions within oneself become more confident and resilient to tackle everyday situations. Howard and Walton (2015) enhanced Adi and Janmohamed (2007) viewpoint by highlighting that children who feel good about themselves are less likely to be pressured into doing things they don't want to do, generally achieve better at school, are happier, enjoy learning new things and positivity is transferable throughout all aspects of their lives.

4.6 Holiday periods

It is important to state that from the end of term 1 to the beginning of term 2 where Sue embarks on a 4 week holiday, Sue's wellbeing dropped by 4% (9th December 2016 – 20th January 2017) and from the end of term 2 to the beginning of term 3 where Sue embarks on a 2 week holiday, Sue's wellbeing dropped by 8% (10th – 24th February 2017). Therefore, at the start of each term, Sue starts with lower wellbeing that positively increases throughout the term, emphasising to the impact of wellbeing on the physical

aspects of OT (see figure 1). Interestingly, this could be assumed that when Sue is having no OT intervention during holidays, her wellbeing has decreased on the return to school.

4.7 Comparison of Terms

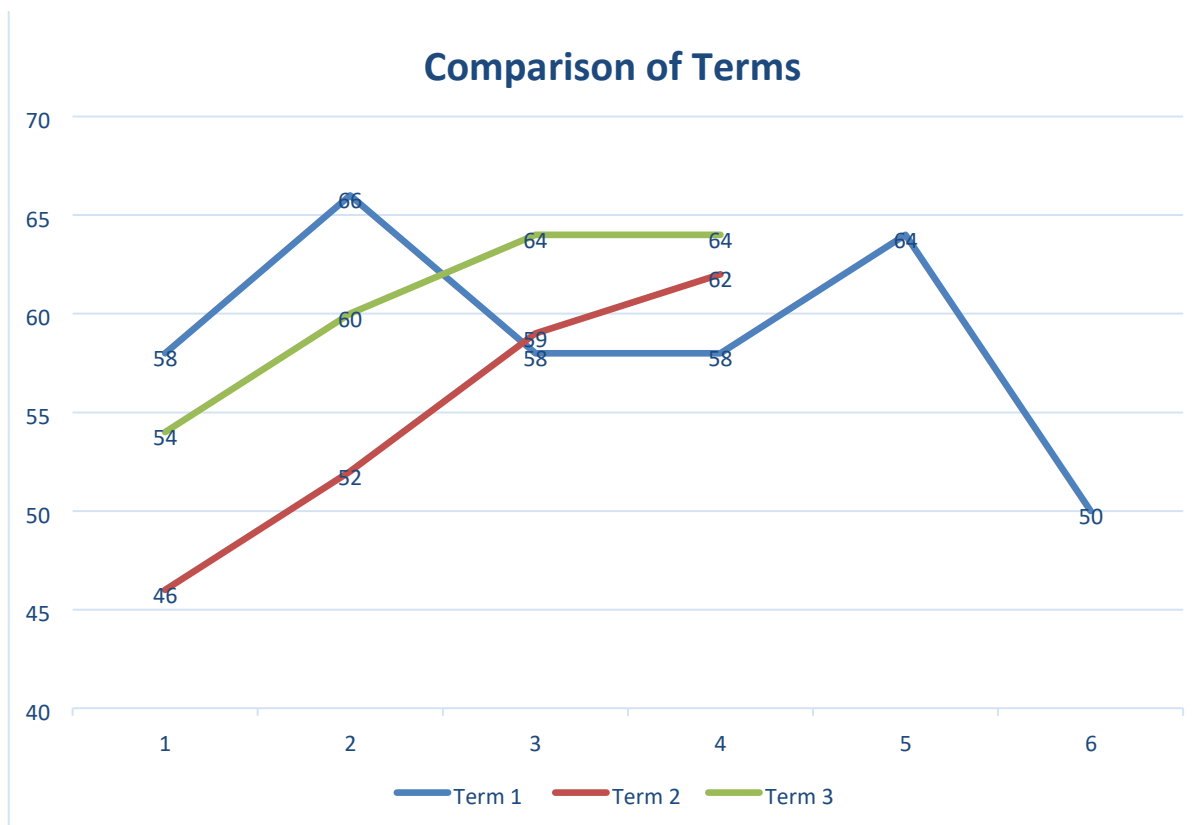


Figure 5- illustrates Sue's wellbeing over each of the terms.

It is acknowledged that the terms were of different lengths, however, this is the length of the school terms and all weeks were recorded. It is possible to see from figure 5 that Sue starts each term at a low level.

After each holiday period, her overall wellbeing has dropped negatively, at the start of term 2 she has dropped by 4%, at the start of term 3 she has dropped by 8%.

In term 2 and term 3 she has a positive increase in wellbeing throughout the terms, with an increase in term 2 overall of 16% and in term 3 of 10%. She does not have the negative drop in her wellbeing that she experienced in term 1.

At the highest wellbeing points, for term 1 and term 2 Sue was successful at completing all aspects of the physical activities of both resisted crawl and cat. For term 3 she was successful in all aspects of the resisted crawl, but for the cat, she struggled with head movements only.

At the lowest wellbeing points for term 1, she was successful in completing all aspects of the physical activities for both resisted crawl and cat. During term 2 she was also successful like in term 1 in all aspects of the resisted crawl, but struggled with aspects of her body for cat movement (see table 3). During term 3, she struggled with both resisted crawl, in particular, the head aspects and cat movement, in particular, the head and leg aspects (see table 5 and table 6) when she was at her lowest wellbeing point of the term.

4.8 Conclusion

This chapter has presented the results of Sue's wellbeing, showing the positive and negative trends in wellbeing that she displayed throughout the 3 school terms. The trends of wellbeing, including the highest and lowest points of wellbeing, to the successful and unsuccessful body movements of resisted crawl and cat have been presented. However, it is important to note that Sue was not able to complete the resisted crawl and the cat successfully at all times throughout the 3 school terms, and therefore further evidence of this can be found in the appendices with such relevance to the study when being discussed. Also, this chapter has discussed the trends of wellbeing that Sue displayed throughout the 3 school terms; clarifying the impact of wellbeing on the physical activities of OT. To further support this discussion, observations from Friday lunchtime free notes and OT notes gained theoretical perspectives from the literature in chapter 2 to surmise the findings from the study. It was apparent that there were many contributing factors that impacted wellbeing on the physical activities of OT on Sue. These included a strong parental influence, influence of friends and alone time, holidays and time away from OT and the influence of future activities, showing a strong emphasis on exam situations. These contributing factors will be explored further in the next chapter, as this will draw conclusions in relation to the research questions and consider some of the limitations of this study and theoretical application.

Chapter 5

Conclusion

5.1 Introduction

The main aim of this study was to investigate the impact of wellbeing on physical activities of OT for Sue. The study explored the relationship between physical activity, OT, and wellbeing, emphasising the case study of Sue.

This section will 1) summarise the main findings, 2) explore the meanings of the findings on the impact of wellbeing on physical activities of OT for Sue; 3) identify limitations to the study, and 4) suggest recommendations for future research and practical applications. For clarity, the research questions are used as a focus for the concluding remarks.

5.2. What is the parental influence on Sue's wellbeing?

This research has demonstrated how maternal influence, may have impacted the wellbeing of Sue in this study. Excerpts from field notes have shown that there may have been an emotional need towards Sue's mother that may have affected her participation in OT. The negative impact might be due to Sue attending a boarding school, which meant that Sue didn't have physical contact with her mother Monday to Friday and this may have impacted Sue's demonstration of emotional behaviours within her OT sessions and Friday lunchtime play times. The absence of her mother could be the reason why Sue shows sadness, anxiety, yearning love, comfort, closeness and desire for attention from her when at school and is increased when returning back to school from a holiday or any time spent together. These explanations are consistent with Holt-Lunstad et al. (2015), as it was highlighted that relationship health within a family should be given a considerable amount of attention as this is *vital* for physical health and development. The emphasis of 'homesickness' may have suggested the possibility of emotional feelings towards Sue's mother due to seeking closeness (cuddles) and comfort when a part and the possibility of the constant readjustment (school to home; home to school), maybe a factor that impacts on wellbeing at the start of each term and may have made Sue feel discontented and anxious, due to the changeability of contact which may have generated insecure feelings, heightening the need for her Mother more (Thorn, 2003).

5.3 What is the influence of friends on Sue's wellbeing?

During term 1, it was a possibility that Sue being on her own was more purposeful to her rather than 'ripsticking' with her friends, despite being included and welcomed into the friendship group. It was assumed that Sue wanted to play and be in the art room on her own. Maitland (2014) emphasised that children having 'alone time' at break times gives children the opportunity to work on self-growth, enjoy alone time and 'recharge their batteries,' thus an opportunity to become the 'best versions of themselves'; supporting personal independence, resilience, and coping strategies. However, there could have been reasons as to why she didn't want to participate, as previously explained in chapter 4. However, during term 2 as Sue's physical activities had progressed during the engagement of netball in particular, her relationships with her friends may have become stronger as she was more confident to partake in physical activities. During term 3, Sue's friends may have supported her progression with ripsticking and netball due to the interactions and positivity with each other. Having this engagement with friends may have enhanced Sue to initiate playing with her friends and may have built the confidence to take the lead with motivation and effort, implying perseverance and teaching friends' knowledge and skills that she had acquired.

5.4 What is the influence of future activities on Sue's wellbeing?

This research suggests that due to Sue being separated from her Mother, Monday to Friday, whilst attending a boarding school, may have heightened her emotional need towards her Mother. This might be due to the feeling of excitement and happiness about seeing her Mother and/or family at a weekend or for a holiday period, which may have been reflected by the positive directions in terms of her wellbeing throughout the study as discussed in chapter four. Furthermore, demonstrating unsuccessful points in the resisted crawl and cat activities may not have had a negative impact on Sue's ability to look forward to future events and activities that could have held much significance towards family and home life, such as looking forward to the Easter holidays and engaging with various activities with her family, as discussed in chapter four.

However, when Sue was approaching exams, in particular in term 1, her wellbeing went in a negative direction, which may have created feelings of anxiety and stress, suggesting the need for her Mum. These stressful times could have been a reason as to why Sue was yearning to see her mum at the weekends for reassurance, and support and to engage in activities with her family. Yet, when exams were over, it was a possibility that Sue was able to look forward to family events and being part of her family unit.

5.5 How does holiday/ time away from OT impact upon the performance of physical activity on Sue ?

As presented in chapter four (see figure 1) at the start of each term, Sue started with lower wellbeing that positively increased throughout the term. This showed that there was a pattern in Sue's wellbeing over the terms, showing that when she came back to school from a holiday, her wellbeing was low. However, Sue's low wellbeing did not correspond with her lower physical states of the cat and the resisted crawl activities. Therefore, as her wellbeing had decreased throughout each holiday period, and there was no correlation to her low physical states, it is to be questioned into how was Sue's wellbeing when her physical capabilities were low. This will be discussed further in section 5.6 and 5.7.

5.6 How does wellbeing impact on Sue's physical activities of OT (resisted crawl and cat)?

As detailed in chapter 4, this study has shown that over the three school terms at the highest point of wellbeing, Sue was successful in the resisted crawl activity. Interestingly, during term 1, Sue was successful at the highest and lowest points of wellbeing for the resisted crawl and cat activity. Yet, during term 3, Sue was unsuccessful with the aspects of the head for resisted crawl (eyes maintain on focal point) at the lowest point of wellbeing.

At the lowest point of wellbeing, during term 2, Sue was unsuccessful with the body for cat (arching of the back was not supporting posture of the body nor muscle flexibility). At the highest point of wellbeing during term 3, Sue was unsuccessful for cat with all of the

head movements and aspects of leg/feet. Therefore, for future practice, it would be recommended that these unsuccessful body movements are to be worked on, to further aid Sue's OT progression to full potential whilst observing Sue's wellbeing.

As Sue's low wellbeing did not correspond with the lower physical states of the cat and the resisted crawl, it could be assumed that it was when she had exam anxieties or due to the low physical preceded anxiety that correlated to her lowered performance of the cat and the resisted crawl. When Sue's wellbeing was high, it may have been "too" high, indicating that she could not pay attention, or may have been "too involved" with friends and other activities. These are possible assumptions that may have correlated with Sue's lowered performances of the cat and the resisted crawl, to further aid Sue's OT physical activity progression.

5.7. Recommendations for future research and practical applications

This research has been conducted throughout the three school terms and has shown that Sue has started each term with a negative trend of wellbeing. Therefore, it would be recommended that Sue may benefit from additional therapy to support her wellbeing. As further research into exploring the impact of high or low wellbeing on the performances of OT activities would benefit Sue's overall OT physical activity progression. This may provide a correlation between wellbeing and the physical activities of OT.

It would be recommended to continue OT activities throughout the school holiday periods. By working closely with parents, this could be arranged by the facilitator of OT within the school to meet with the parents to discuss and give guidance of the OT programme for them to feel confident enough to implement this throughout the school holidays. This would benefit Sue's overall OT progression as this would allow for consistency and continuity throughout. This could also be applied to other children who are receiving OT within a school.

One of the main focuses of this study has been on Sue's wellbeing and that of the wellbeing scale shaping the research which has shown positive and negative trends, relating to particular situations that she has encountered throughout. Therefore, it would be important to recommend that wellbeing would continually get measured once a week using the wellbeing scale as a complementary tool, to promote the longevity of healthy

mindful children. This then can potentially correlate with OT in general, as the main focus of OT is for people to increase their functional independence in daily life while preventing or minimizing disability, yet encouraging positive wellbeing will enhance children's holistic development to grow into adulthood with enhanced functional skills for accessing everyday life and a healthy mind to cope. The OT notes and free notes that are obtained from observations are key to knowing beyond just that of the wellbeing scale, as the scale didn't show all of the low feelings and emotional detachments of being away from her Mum as discussed, identifying the significance of the importance of observing children using qualitative tools.

For future practical applications, it is recommended that Sue works on a) the head for the resisted crawl, with an emphasis on the eyes maintaining on focal point, and b) the body, with an emphasis on the supportive posture. Her arching of the back was not supporting her posture of the body nor muscle flexibility, the head and legs/feet for the cat activity. These practical applications would benefit Sue's OT physical activity progression.

5.8 Further Research

As there have been many contributing factors that have supported the study to become a novel piece by exploring the impact of Sue's wellbeing on the physical activities of OT, I feel the research has filled a gap in Occupational Therapy and Physical Activity due to closely regarding the importance of parental attachment, friendships, personal feelings and needs and how this impacts the physical aspects of OT development within school. Having this research in place can enlighten future research to explore what are the implications of disengaging from school-based OT during school holidays. Therefore, this would make original PhD work as it may have multidimensional purposes for other fields due to seeking if any differences are made to therapy progressions when there is an absence of therapy. Also, disengaging from OT during a holiday period may detriment the progression of the physical aspects, children's wellbeing and happiness and the motivation of starting back to OT after periods of not being engaged with and can pose some questions as does this impact on children's happiness? And does parental/grandparents/caregivers involvement play a role in the children's physical development over a holiday period?

Additionally, as this study has not included the presence of Sue's father, future research may include if there is any difference between the mother's and father's role when impacting on wellbeing through the engagement of physical activities of OT.

5.9 Limitations to the study

Due to Sue having dyspraxia and that every person with dyspraxia is different as a result, this study cannot adhere to generalisation due to the individual case and individual needs. As this thesis has adopted constructivist approaches, where Sue could freely express her views and make meanings of her own reality (Cohen, et al. 2000). Also due to the case study design obtaining holistic understanding of a set of issues and how they relate to something in particular and cannot be generalised, as Thomas (2015) believes that there is subjective bias in the observational methods used and that broad inferences cannot be drawn from these. Furthermore, this thesis has focused on the two (resisted crawl and cat) out of the four (resisted crawl, cat, rolling and head turning) exercises that Sue engages with throughout her OT sessions, as explained in chapter 1. Due to the complexity of the study, the data collected has been too vast for the study to explore the impact of wellbeing on these physical activities (rolling and head turning), which may have shown different outcomes from the focused two activities for this research if they were to be studied.

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Appendices

Appendix 1 – Occupational Therapy Report

Appendix 1 -
OT report

Dyspraxia ~~Developmental Co-ordination Disorder~~
(Developmental Co-ordination Disorder)

Name: ~~_____~~ ~~_____~~

Address: ~~_____~~ ~~_____~~
~~_____~~ ~~_____~~
~~_____~~ ~~_____~~
~~_____~~ ~~_____~~
~~_____~~ ~~_____~~

Summary

~~_____~~ is a Year 6 pupil at Wellesley House School in Broadstairs. I was asked to assess her by ~~_____~~, Head of Learning Support, because she had identified, in ~~_____~~ many indicators that suggest dyspraxic difficulties: poor co-ordination and body awareness; lack of focus; very poor organisation skills. She is a delightful young lady but she is encountering difficulties in her academic work, physical activities and the organisation of self and belongings that mean that she is not fulfilling her potential. ~~_____~~ worked very willingly, trying hard throughout the long assessment session.

During the assessment I looked at ~~_____~~ posture, gross and fine motor skills, balance, co-ordination, core body strength, body awareness, proprioception and kinaesthetic memory, eye tracking and visual-motor integration. I also tested her for retained infantile reflexes. These are very significant in pupils experiencing developmental co-ordination disorder. ~~_____~~ has a cluster of reflexes that are retained to the extent of approximately 50%. These will be contributing quite significantly to her difficulties and need to be addressed through a programme of exercises that will mature and then suppress each reflex. The reflexes have affected the development of her gross and fine motor skills, as well as her ability to sit well in class, concentrating and functioning in a way that is expected of a 10 year old.

I have also taken into consideration information provided from school regarding teachers' opinions about how ~~_____~~ functions in areas that I cannot observe during the assessment. ~~_____~~ does not have ~~_____~~ developmental history, which is usually quite significant in outlining a profile, but gave information regarding how ~~_____~~ functions in lessons and the boarding situation. ~~_____~~ reports that ~~_____~~ has some difficulty sitting still, fiddles with things and sometimes falls over or bumps into things. She is easily distracted. She has some difficulty in PE/Games lessons; co-ordination and body awareness are poor and ~~_____~~ lacks the

ability to positively engage in the activity. Another area causing concern at home and school is [redacted]'s inability to keep herself and her belongings organised. [redacted] loses her belongings and this has a detrimental effect on her engagement and performance at school.

From the information provided by [redacted] and the specific tests that I gave [redacted] during the assessment it is apparent, in my opinion, that she has some quite significant problems. However, her difficulties can be drastically reduced and her abilities and skills greatly improved through the programme that I am suggesting. These exercises will take 5 - 10 minutes and should be done on a daily basis. I have suggested two stages of exercises. The second should be undertaken when [redacted] has shown significant progress and response to the initial programme. I also feel that [redacted] needs some sensory integration work to improve her responses to stimuli: aural, visual and physical.

In my report, I will outline [redacted] physical problems under each section and how they impact on her learning abilities in the classroom. I will also make some recommendations. These are made to support the school, and her parents, in their work with [redacted]. I am happy to answer any questions that arise from this report or the suggested programme of exercises.

Assessment Details

The following areas were assessed through various appropriate exercises and tasks. The term "dyspraxia" will also be used to refer to motor development difficulties. Where I do score an activity, it is done so on a scale of 0 - 4 where 0 means 'normal'// no interference or no reflex activity; 4 means unable to perform task, or reflex strongly present.

Posture

Good posture is of vital importance for ease of movement and functioning, general well being of the whole body and learning situations. Imbalance in the body can result in:

- poor carriage of the head that can affect the voice and give tension through the shoulders;
- incorrect curvatures in the spine that cause instability in the shoulder and pelvic girdles, creating incorrect alignment in the legs, knees and feet;
- weaknesses in the feet (little arch support) that cause a rolling in of the tibia, and the knees to cross, resulting in instability when standing and difficulties in mobility when walking and running.

A pupil with physiological instability will find sitting, standing and mobility more difficult and will expend more energy maintaining stability to the detriment of learning. Postural reflexes develop from the primitive reflexes.

[redacted] has good strong standing posture in the head, neck and torso although her feet are typically quite flat with little support through her legs. When she walks, [redacted] flexes at the hips giving her a forward leaning gait. This can be corrected by encouraging [redacted] to pull up through the spine.

Body and Spatial Awareness

Some individuals with dyspraxia have little body awareness i.e. they are unable to align themselves correctly in a symmetrical, balanced way. They also have little awareness or control

over their body when in an unusual position e.g. inverted. This is obviously a disadvantage in subjects like gymnastics. Some pupils are even unable to locate named body parts. Spatial awareness is important in locomotion in and around the classroom environment and also in the relationship between self and others i.e. the inappropriate invasion of other people's space.

_____ was not fully aware of the position of her body, particularly her legs. When asked to lie in a straight line like a soldier standing to attention she assumed a 'banana' shape. She was a little better when making a star shape. _____ was also slightly misaligned as she moved from one position to another. Her body and spatial awareness will improve as the reflexes inhibit and her co-ordination and self-awareness becomes stronger.

Reflexes

Reflexes develop in the pre- and neo-natal baby. These reflexes are not only essential for the infant's survival, but their development, maturation and subsequent inhibition are the building blocks for the development in the child of the postural reflexes, gross motor and then, fine motor skills. Research has shown that the continued presence of the primitive reflexes and the absence of the postural reflexes, play a significant role in writing, reading, copying and Maths difficulties. They also affect concentration, the ability to sit still with focus on a task and the pupil's short-term memory.

Asymmetric Tonic Neck Reflex (ATNR) The presence of this reflex causes difficulties in fine motor control e.g. handwriting, expression of ideas in written form, posture, eye tracking and binocular vision used in copying from the board.

_____ showed flexion in the elbows in response to the turning of the head in the Ayres Test, scoring 2 on the right turn of the head and 2 on the left turn of the head. Her feet and toes were also moving in response to the turning of the head. There was some reaction happening generally in her body as I turned her head whilst she was lying on her back. This was in response to the stimulation of the reflex. This may cause _____ to find it a little difficult to sit in a suitable position for working and maintain stillness and focus because movement of the head from side to side is eliciting some reaction in the body, particularly the hands. Head Turning will mature and inhibit this reflex. Whenever possible, _____ should be facing the board or the focus of the lesson so that there is minimal movement of the head from side to side.

Symmetric Tonic Neck Reflex (STNR) This reflex creates tensions in the body when a pupil is sitting on a chair or on the floor with arms and legs bent. As the head is flexed or extended, tensions are created in the arms and/or legs. The pupil will adopt a posture to try to stabilise the body e.g. hook legs around the chair or lay the head on the arm to anchor it whilst trying to work. Alternatively, he/she will stand up to work or stretch the legs or arms out in an attempt to relieve the stress that builds up in the body. The presence of this reflex affects hand/eye coordination and causes problems with refocusing from far to near distance.

When I administered the specific test for this reflex _____ found it difficult to hold her position as she flexed and extended her head. She complained that it hurt her shoulders and moved her hands into alternative positions. _____ also started to move her feet. This reflex is matured and inhibited in the infant when it goes through the crawling stage. It starts with the baby lying on

the stomach and learning to lift the head. The baby then progresses to rocking on the haunches, moving onto hands and knees and continues with full crawling (sometimes referred to as creeping) until walking takes over completely. This stage should last about six months. These processes are directly responsible for developing the postural muscles and independence of the movement of the head from the rest of the body. For these reasons the exercises to inhibit the reflex reflect the developmental stages of early childhood: Commando Crawl, Resisted Crawl and Cat will mature and suppress this reflex. This reflex will also cause [redacted] to feel fidgety whilst trying to sit, work and concentrate.

Palmar Reflex – This is a reflex that causes a clasp reaction to stimulation of the palm and can, therefore, cause poor manual dexterity and/or immature pencil grip.

[redacted] showed no response to the stimulation of the reflex although she said that 'it felt funny'. However, because she did not have an automatic grasping reaction this reflex is sufficiently inhibited.

Spinal Galant – This reflex occurs when there is stimulation to the lumbar region of the spine. An aberrant spinal galant will result in an inability to sit still or remain silent, poor concentration, a dislike of tight clothing and bed wetting beyond the age of 5 years.

[redacted] showed no response to the brushing of her spine so therefore this reflex is no longer present.

Oculo-Headrighting Reflex – This reflex, when fully developed, comes into effect as a result of visual input.

Labyrinthine Headrighting Reflex – This reflex, when fully developed, is activated by information from the vestibular apparatus.

If these two reflexes do not both fully develop, the result can be visual-perception difficulties, poor spatial awareness and balance and oculo-motor dysfunctions (poor eye movement control). These reflexes do not inhibit, they remain functional.

[redacted] showed a poor response during the first part of the test. As I moved her body off the vertical plane through 30, 45 and 60 degree angles, she moved her head with her body and failed to keep it vertical with eyes fixed on the focal point. Her head should move independently from her body. [redacted] started fairly well when we repeated the test with her eyes closed but soon allowed her head to flop. This underlines how much she relies on her visual input for information to enable her to maintain balance and control of her body during dynamic movement.

Tonic Labyrinthine Reflex - The presence of this reflex causes poor balance, rigid or floppy muscles, oculo-motor dysfunctions, visual perception difficulties, possible auditory problems, organisation difficulties and a poor sense of time and rhythm. The test involves taking away visual input by closing the eyes. The head is slowly extended and flexed and the brain has to rely on the vestibular system for information about changes in body position.

I scored this as 2 when I tested [redacted]. She managed to maintain her balance. However, she showed a change in her posture and moved her hands and feet in response to the movement of

her head. This was likely to have been an automatic adjustment to 'fix' and stabilize her body under pressure.

Moro Reflex - The Moro Reflex should emerge from 9 - 32 weeks after conception and be fully present at the time of birth. It should be fully inhibited in the newborn baby between 3 - 4 months of age. The retention of this reflex causes a child to be over-reactive and hypersensitive. He may be stimulus bound, actively seeking various sensations. A pupil with a Moro Reflex will have difficulties with ball games. In the adult it is seen as a 'startle' response.

When I administered this test [redacted] showed appropriate response in her reaction, thus showing that she is not affected by the retention of this reflex. She also caught the beanbag and ball with the correct action. Pupils with this reflex are inclined to push the ball away from themselves rather than gather it in.

Gross Motor Skills and Co-ordination - These are large muscle movements e.g. crawling, walking and running that will develop into more complex co-ordinated dynamic movements, such as throwing, skipping and jumping. Their execution should be smooth and efficient to produce an effective performance in any given skill, appropriate to age.

In the initial mobility tests that I administered, [redacted] showed some stress as the tasks became more difficult. This was displayed in sympathetic movements in her hands and she moved quite awkwardly and had some loss of balance, particularly when moving backwards. This is recognised as an initial indicator of dyspraxic difficulties.

[redacted] performed the co-ordination tasks well, only finding hopscotch a little harder; she did not distribute her weight evenly on her two feet in the two-foot phase and was not very firmly placing her single foot in the middle. Interestingly, [redacted] has a dominant left foot despite being right-handed. [redacted] then found it hard to maintain the pattern when I asked her to do a right footed hopscotch. [redacted] skipping and star jumps showed good co-ordination. From these observations I conclude that [redacted] can learn her gross motor and co-ordination skills but she may need more time to practise and some hints about how to perform them may be required.

[redacted] showed an ability to cross the mid-line comfortably. This means that she has the ability to work across her body, for example, catching a ball with both hands to one side of the body or the other; engaging a successful bowling action.

Static Balance - This is the ability to perform balance postures with eyes open and closed.

[redacted] chose her left foot to balance on but was a little insecure. However, she was better when balancing on her right foot. As in everything else, [redacted] is right side dominant. I feel she should be encouraged to use her right foot in activities such as kicking or take-off for high jump, long and triple jump.

Dynamic Balance - This is the ability to control the body during movement.

[redacted] walked along the balance beam confidently and controlled the wobble board well. She showed good control whilst bouncing on a trampette and when I asked [redacted] to run around a speed, changing direction and stopping as quickly as possible, she controlled her body weight well.

Fine Motor Co-ordination – This looks at dexterity and the ability to use the hands efficiently for skills such as writing and drawing.

I gave [redacted] some tasks to do to look at her dexterity and the way she uses her hands together. She worked nicely and showed good co-operation and efficiency between her hands when using both together in a task. Her scissor control was quite good.

[redacted] has small, neat handwriting although it is not cursive. I think it would be a small and easy step for her to develop cursive writing.

Hand/Eye Co-ordination – This is the ability to co-ordinate the two hands together with visual information to achieve a task. This is obviously involved in activities such as games requiring catching and throwing, and construction games, like Lego.

In the throwing and catching section of the assessment [redacted] showed a good degree of skill, moving to the ball and co-ordinating her two hands to achieve the catch. She returned the ball in mainly accurate throws. I feel that with some focussed practice [redacted] could develop her skills into some very secure techniques.

Eye Tracking – It is important that the eyes can work together to follow a line of text without missing or skipping any of the information. Difficulties in crossing the midline can cause disruption in the smooth transition of the eyes from left to right and right to left that is so vital in reading and writing.

[redacted] showed a secure ability to follow a moving focal point that crossed from right to left and back.

Oral Skills – Some babies do not develop through the various stages of eating and may get stuck in the 'squash and swallow' stage, i.e. squashing food against the roof of the mouth and then moving it back with the tongue to swallow. Reduced use of the chewing action is evident. This problem limits a child's palate. He/she will not enjoy many textures, nor will he/she like strong flavours. Just as the muscles of the mouth do not develop for eating, limiting the palate, so they do not co-ordinate to form letter sounds and blends.

[redacted] is a bit of a fussy eater. She has some slight articulation problems in her speech but these are improving with her Speech and Drama (LAMDA) lessons.

Proprioception – This enables an individual to know where parts of the body are at any time and to make the appropriate postural adjustments. It is the feedback to and from the brain that provides the control for body management.

[redacted] was 100% accurate in my test to measure her sense of touch. With the test to see whether [redacted] could detect joint movement she was 100% accurate. Therefore there are no problems in this area.

Kinaesthetic Memory - This is when the muscles are able to 'remember' what it feels like to perform a movement. This means that activities do not have to be continually relearned or thought about during the process of execution. This applies to all motor skills including, most importantly, handwriting.

■■■■ was a little hesitant in this test which suggests that she does not remember the feeling of the movement and patterns of movement very easily. When ■■■■ is learning a new skill and when she performs something well she should be encouraged to think about how it feels and try to repeat that feeling. Repetition of actions is important to develop the kinaesthetic memory.

Goodenough Draw-a-Man Test

I asked ■■■■ to draw a man or a lady so that I could apply the Goodenough Draw-a-Man Test. The resulting drawing had an age equivalent of 9 years. The head and torso proportions were accurate but the arms, legs and feet were too small and the whole image lacked some of the detail that was needed to score.

The Beery-Buktenica Developmental Test

This test looks at visual-motor integration. It requires the copying of pre-drawn designs of increasing complexity. These skills are important for the foundation of handwriting skills. I also administered the two sub-tests. One tests visual perceptual skill and the other tests motor co-ordination.

In the visual perception test ■■■■ score came out at the 63rd percentile, an age equivalent of eleven years and nine months. In the motor co-ordination test ■■■■ scored at the 19th percentile, an age equivalent of seven years and eleven months. This highlights Timi's weak motor skills but shows that her visual abilities are strong. When visual and motor skills were integrated in the first test that I gave ■■■■, her resulting score came out at the 23rd percentile, giving an age equivalent of eight years and one month. ■■■■ fine motor control could be improved through activities such as doing dot-to-dot pictures, mazes and colouring.

Conclusion and Recommendations

In conclusion, ■■■■ has fairly significant dyspraxic problems that are creating some difficulties for her. The tests for the retention of the various reflexes scored 1s and 2s, meaning that they are retained by 25% - 50%. I am going to suggest some exercises to inhibit these reflexes. Their inhibition will help her gain greater confidence and more efficiency in her motor skills and co-ordination and she will gain greater stillness and focus in her lessons.

I also feel that ■■■■ has some sensory integration difficulties. She would appear to over or under react to various stimuli. Timi would benefit from some activities to help her to react to aural, visual and physical input through her senses in a moderated manner. This would help ■■■■ to be less impulsive.

needs to be taught how to organise herself and her belongings. Check lists (done in little pictures) can be stuck up in her room to remind her of (for example): what she needs to do and in which order; what clothes should be in which drawers; where her PE kit and swimming equipment is. However, she should also develop some greater self-awareness and calmness when her reflexes are inhibited and her response to sensory stimuli are moderated.

should do her exercise programme every day. She needs to do each exercise as accurately as possible.

The following suggestions are made to help her at school:-

- Sit facing the board in a position where there will be minimal movement of the head and fewest distractions
- More practice time for learning new skills in PE/games
- Awareness of need to learn and remember the 'feel' of actions and movements
- Put in place strategies for her organisation problems

I have suggested the following exercise programme that needs to be done on a daily basis to inhibit the reflexes. These need to be done at least 5 days out of 7. I will monitor how the exercises are going and how is responding in class.

Exercise Programme for the inhibition of reflexes - to be done daily

Initial exercises:

- Rolling
- Resisted Crawl
- Cat
- Head Turning

Second stage:

- Angels in the Snow
- Chair Turning

Exercises to improve sensory response (on a physio ball):

- 'Rock and Roll'
- Backward extension
- Balance
- Embryonic rock
- Resistance pull with a physio band
-

Additional activities that will help Timi develop her fine motor control:

- Mazes
- Dot-to-dot
- Drawing activities
- Colouring

Appendix 2 – Copy of cat tick list observation

Appendix 2 - copy of cat tick list observation

Occupational therapy- tick list structured observation

Date:

Time:

Skill being observed:

Cat:

Movement being observed:	
Head-	
Drop head smoothly.	
Look down between knees	
Keep head down whilst maintain stillness for five seconds	
Head back up to look forwards	
Arms/hands-	
Arms straight	
Hands flat	
Thumbs out	
Body-	
Ensure arching of the back supports posture of the body	
'Four square' position needed to support core stability	
Legs/feet-	
Keep knees still	
Keep feet still	

Free notes

Appendix 3 Copy of resisted crawl tick list observation

Appendix 3 - Copy of resisted crawl tick list observation

Occupation therapy - tick list structured observations

Date: _____

Time: _____

Skill being observed: _____

Resisted Crawl

Movement being observed:	
Head-	
Head up	
Eyes maintain on focal point	
Look forward	
Arms/hands- Hands flat and under the shoulder	
Fingers pointing forwards	
Body-	
Body helps to keep the momentum of the crawl to move forwards and backwards	
<u>Opposite arm to leg.</u>	
Crawl for about 10 metres	
Start in the 'four-square' position	
Good core stability is needed	
Legs/feet-	
Knees under hips	
Feet flat and slide along the floor during the exercise	

Free notes

Appendix 4 – Semi-structured observation (bottom of section)

Appendix 4 - Bottom section showing Semi-structured Observation

Occupation therapy- tick list structured observations

Date: 20/2/17 - monkey

Time:

Skill being observed:

Resisted Crawl

Movement being observed:	
Head-	
Head up	X
Eyes maintain on focal point	X
Look forward	✓
Arms/hands- Hands flat and under the shoulder	X
Fingers pointing forwards	X
Body-	
Body helps to keep the momentum of the crawl to move forwards and backwards	X
Opposite arm to leg.	
Crawl for about 10 metres	X
Start in the 'four-square' position	✓
Good core stability is needed	X
Legs/feet-	
Knees under hips	✓
Feet flat and slide along the floor during the exercise	✓

Free notes

Very tired. Sad to be back to school.
 Really missing Mum. "can't wait for the weekend"
 just want a cuddle from Mum"

Appendix 5 Friday lunchtime free notes 10/2/2017

Appendix 5- Friday lunchtime free notes- 10/2/17

Lunchtime free observation- 10/2/17

In dormitory packing clothes away and belongings in a suitcase. Puts a teddy in a bag. "Can't wait to give this to my mum?" "Awww, why is that," asked the researcher. "I won it on a raffle and my mum loves teddy bears, so im going to surprise her later when I see her."replied research child. "That's lovely, are you looking forward to half term?" asked researcher. "Yeah, I'm so excited, we are going to Nigeria and I get to see all my cousins."

Research child puts stuff away and exits dormitory and walks out towards the field. Wanders on field for a few minutes. Sees one of her friends, approaches. Asks, "What are you doing?" Child replies "going to go on my ripstick, are you coming?" Research replies "yeah, ok".

Both walk to the ripstick area. Friend gets ready. Research child watches. Researcher asks "would you like to go on your ripstick?". Research child says, "hmmmm, ok then." Researcher says, " I can support you on it if you like?" Child replies, "no its ok, ill be fine".

Research child gets her helmet and knee and elbow pads on. Whilst holding on to the wall, she puts left foot at the front then placed the right foot to push off with the back foot , then feet were in the middle of the ripstik, lost balanced and fell off. Attempted again. Lost balance fell off. Attempted again. Lost balance fell off. Attempted again and then used back foot to wriggle the board. Slight momentum going, then feet fell off. Smiled and looked around. Approached a wall and attempted again. Pushed off with the back foot and got some momentum going for a few seconds then lost balance. Got off and put the ripstik back.

Researcher said "well done, what a great effort". Research child said, "thanks, but I need to get better."

Put her ripstik stuff away and walked into the art room. Got some paper and pencils and started drawing. Stayed here until the end of lunch.

Appendix 6- Transcript from physiological responses- The researcher made comments linked to the wellbeing scale to ensure clarity and to link each of the relevant numbers (1-14) of the wellbeing scale. This was then summarised to ensure the key points of the findings were made apparent and clear.

Data Analysis- Physiological responses (Nov-Dec, 2016) (Wellbeing scale- 3.I've been feeling relaxed, 5.I've had energy to spare.)

Friday lunch time- free notes

11/11/16

Got up and walked around to the ripstick area.

Walked off around the field, on own, swinging arms from side to side.

18/11/16

Research child runs ahead of the two friends. One of the friends then catches up and then runs on ahead. Research child speeds up and gets to the pet shed first.

Research child does her art. After about five minutes, looks out of window, watching children outside. Then gets back to her art. After another five minutes, looks out of the window, spots one of the girls she was with earlier, runs outside and says, "do you want to see what I've done." Child replies, "No, i'm busy doing this." (ripsticking). Research child smiles and walks back into the art room. Stays in the art room doing her project until the end of break.

26/11/16

Research child says, "yes" and jumps up. Gets into position. Seems confident, smiles. Plays quietly. No dialogue.

Research child walks to the art room. Enters. Gets art work out and sits at the table with colouring pencils. Does art work until someone comes in. Looks at the child who walked in, watched and then after a few moments, gets on with art work again. Does this until the end of break.

2/12/16

Wet lunch time- in common room, sat on the sofa with her two friends as previous, discussing about a trip to Chessington. Laid back on the sofa, feet curled up. Eye contact with friends who engages in a conversation with at a time.








Walks out of room, looks around the corridor, comes back into common room, sits back on sofa, picks up a book from the floor and flicks through it.

9/12/16

Research child stands up. Then sits down again.

Research child and girl run to the pet shed.

They both leave the pet shed. Start to walk around the field and talking. Swinging arms side to side.

-  **laura**
On her own. Not just sitting, using energy to walk (wellbeing scale, 5).
-  **laura**
Likes to compete. Uses energy to run (wellbeing scale, 5).
-  **laura**
Rather be doing her art work, then engaging with others? Does the art work prioritise over being active outside? Is she upset that her friend didn't want to see her work? Is this demotivating? Or she is enjoying her own time, doing what she likes? Has the concentration to do her art work until the end of break. Feeling motivated to do her art project through her free time. (wellbeing scale-3,5).
-  **laura**
Energetic (wellbeing scale-5).
-  **laura**
Relaxed and motivated. No distractions. Can concentrate on things that are of interest to her and wants to do during lunch break (wellbeing scale-3).
-  **laura**
Does wet play times give the research child time to engage in conversations? Does this make her not want to be energetic but just to relax? (wellbeing scale-3).
-  **laura**
Not much energy? Wet play time a contributing factor to this? (wellbeing scale-3).

Appendix 7 Adapted wellbeing scale

Appendix 7 - Adapted wellbeing Scale

Wellbeing self-assessment

How happy are you?

Good mental wellbeing - some people call it happiness. It means feeling good and functioning well.

This tool uses WEMWBS, a scale which is often used by scientists and psychologists to measure wellbeing.

About the wellbeing scale

This tool has been adapted for school based purposes and uses WEMWBS (The Warwick-Edinburgh Mental Well-being Scale) to measure mental wellbeing. WEMWB was created by mental wellbeing experts, and is often used by scientists and psychologists.

The WEMWBS questionnaire for measuring mental wellbeing was developed by researchers at Warwick and Edinburgh Universities (see Tennant R, Hillier L, Fishwick R, Platt P, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S (2007) The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation, Health and Quality of Life Outcome; 5:63 doi:10.1186/1477-7252-5-63).

This will measure well-being, from a scale of 1 to 5. The scale will show 1 being the lowest and 5 being the highest.

1. I've been feeling good about the future

1.	2.	3.	4.	5.
----	----	----	----	----

2. I've been feeling useful

1.	2.	3.	4.	5.
----	----	----	----	----

3. I've been feeling relaxed

1.	2.	3.	4.	5.
----	----	----	----	----

4. I've been feeling interested in other people

1.	2.	3.	4.	5.
----	----	----	----	----

5. I've had energy to spare

1.	2.	3.	4.	5.
----	----	----	----	----

6. I've been dealing with problems well

1.	2.	3.	4.	5.
----	----	----	----	----

7. I've been thinking clearly

1.	2.	3.	4.	5.
----	----	----	----	----

8. I've been feeling good about myself

1.	2.	3.	4.	5.
----	----	----	----	----

-

9. I've been feeling close to other people

1.	2.	3.	4.	5.
----	----	----	----	----

10. I've been feeling confident

1.	2.	3.	4.	5.
----	----	----	----	----

11. I've been able to make up my own mind about things

1.	2.	3.	4.	5.
----	----	----	----	----

12. I've been feeling loved

1.	2.	3.	4.	5.
----	----	----	----	----

13. I've been interested in new things

1.	2.	3.	4.	5.
----	----	----	----	----

14. I've been feeling cheerful

1.	2.	3.	4.	5.
----	----	----	----	----

Appendix 8 – Original copy of wellbeing scale prior to adaptation

Appendix 8- Original copy of the wellbeing scale, before it got adapted for Sue.
Wellbeing self-assessment

How happy are you?

Good mental wellbeing - some people call it happiness - is about more than avoiding mental health problems. It means feeling good and functioning well.

This tool uses WEMWBS, a scale which is often used by scientists and psychologists to measure wellbeing.

To get your wellbeing score, go through the following statements and tick the box that best describes your thoughts and feelings over the last two weeks.

About the wellbeing scale

This tool uses WEMWBS (The Warwick-Edinburgh Mental Well-being Scale) to measure your mental wellbeing. WEMWBS was created by mental wellbeing experts, and is often used by scientists and psychologists. The WEMWBS questionnaire for measuring mental wellbeing was developed by researchers at Warwick and Edinburgh Universities (see Tennant R, Hiller L, Fishwick R, Platt P, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S (2007) The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation, Health and Quality of Life Outcome; 5:63 doi:101186/1477-7252-5-63).

QUESTIONS

1. I've been feeling optimistic about the future

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

2. I've been feeling useful

- a) None of the time (1 point)
- b) Rarely (2 points)

- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

3. I've been feeling relaxed

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

4. I've been feeling interested in other people

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

5. I've had energy to spare

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

6. I've been dealing with problems well

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

7. I've been thinking clearly

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

8. I've been feeling good about myself

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

9. I've been feeling close to other people

- a) None of the time (1 point)
- b) Rarely (2 points)

c) Some of the time (3 points)

d) Often (4 points)

e) All of the time (5 points)

10. I've been feeling confident

a) None of the time (1 point)

b) Rarely (2 points)

c) Some of the time (3 points)

d) Often (4 points)

e) All of the time (5 points)

11. I've been able to make up my own mind about things

a) None of the time (1 point)

b) Rarely (2 points)

c) Some of the time (3 points)

d) Often (4 points)

e) All of the time (5 points)

12. I've been feeling loved

a) None of the time (1 point)

b) Rarely (2 points)

c) Some of the time (3 points)

d) Often (4 points)

e) All of the time (5 points)

13. I've been interested in new things

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

14. I've been feeling cheerful

- a) None of the time (1 point)
- b) Rarely (2 points)
- c) Some of the time (3 points)
- d) Often (4 points)
- e) All of the time (5 points)

RESULTS

0-32 points

Your wellbeing score is very low.

Most people have a score between 41 and 59. You may want to begin by talking to a friend or health professional about how you can start to address this.

There are five evidence-based steps we can all take to improve our mental wellbeing. They are:

- Get active
- Connect with others
- Keep learning
- Be aware of yourself and the world
- Give to others

Go to useful links for more on the five steps.

32-40 points

Your wellbeing score is below average.

Most people have a score between 41 and 59. Why not take action to improve your mental wellbeing?

There are five evidence-based steps we can all take to improve our mental wellbeing. They are:

- Get active
- Connect with others
- Keep learning
- Be aware of yourself and the world
- Give to others

Go to useful links for more on the five steps.

40-59 points

Your wellbeing score is average.

Most people have a score between 41 and 59. You can still improve your mental wellbeing by taking action.

There are five evidence-based steps we can all take to improve our mental wellbeing. They are:

- Get active
- Connect with others
- Keep learning
- Be aware of yourself and the world
- Give to others

Go to useful links for more on the five steps.

59-70 points

Good news, your wellbeing score is above average.

Most people have a score between 41 and 59. Continue doing the things that are keeping you happy.

There are five evidence-based steps we can all take to improve and maintain our mental wellbeing. They are:

- Get active
- Connect with others
- Keep learning
- Be aware of yourself and the world

Appendix 9 – Ethics form

Appendix 9- Ethics form- The researcher had to complete an ethics form to present and reduce harms in research and to ensure adequate protection for the research child. This was sent to the Faculty of Education Ethics Committee for approval within Canterbury Christ Church University.



PEER REVIEW REPORT

Name of Researcher(s): Laura Power

Project title: To investigate the benefits of the physical activities of occupational therapy (O.T.) in relation to self-esteem and confidence of a child with dyspraxia.

Project number:

REVIEWER

Name: Dr Kristy Howells

Address: Faculty of Education

Date sent to referee: 27th Oct 2016

Date received by referee: 27th Oct 2016

Date to be returned by: 27th Oct 2016

Please return signed copy to:

Emailed copy to:

PLEASE REMEMBER THAT YOU HAVE COMMENTED ON EACH OF THE SECTIONS LISTED HERE!

1. Is the research problem clearly defined and appropriate to the level of study?
Yes No Send form to the teacher
If further development or clarification is required please give details below.

2. Please comment on the research aims and/or objectives. Are they, for example, clearly stated? Appropriate? Relevant?
Aims and objectives are clearly stated.
All are appropriate and relevant for the setting.

3. Has the relevant literature, if any, been taken into account?

Yes No

If appropriate please comment on the current review and make suggestions about areas that have been omitted or need to be considered.

4. Is the study design sound and appropriate to the needs of the project? Is the rationale for the work clear? Is the selected design appropriate for the planned study? Please give your comments on each of these points.

Study design sound is appropriate.

It examines occupational therapy that is currently being undertaken in practice and examines the benefits of this therapy.

Observations are designed and wellbeing tool has already been approved and currently is being used in the school so is familiar to the child and the setting.

5. Are the methods adequately developed and appropriate to the aims of the project?

Yes No Need further clarification

Please comment on each of the aspects listed below:

Sampling:

The sample size is small, but it is designed as a case study and focused depth of knowledge on one child with dyspraxia.

Data collection techniques:

Variety of observations are to be used and a measurement tool for wellbeing. All suitable for the setting.

Data analysis:

Analysis links well to the observations and themes are be seen already that will be analysed.

Please make additional comments below:

6. Have relevant ethical issues been taken into account in the
Please comment on each of the areas identified below:

Informed consent:
Letters included and suitable.

Privacy and confidentiality:
All addressed.

Respect for vulnerable persons:

n/a

Assessment of potential harm to subjects:
n/a

Assessment of potential benefits to subjects:
n/a

Data Protection: Storage of data:
Addressed and appropriate

Data Protection: Retention of data:
Addressed and appropriate

7. Is the project worthwhile, innovative and/or timely?

Yes No

Please comment on each of the aspects listed below:

Worthwhile:

Yes, very little research focuses on the benefits of occupational therapy, yet OT is used with children within setting and with specific children the benefits need to be accessed and consider therefore very worthwhile.

Innovative:

Yes - focuses on current practice.

Timely:

Yes - will examine the benefits over a course of the academic year and is relevant.

Please make additional comments below:

8. Is the researcher appropriately trained to carry out this work? (see enclosed CV)

Yes No

If there are concerns about this please make your comments below:

9. If the answer to question 8 is 'No', does the project supervisor(s) have the appropriate skills and expertise to supervise the applicant? (see enclosed CV)

Yes No

Please comment below:

10 Would you recommend that the proposal be:

a. Accepted	Yes <input type="checkbox"/>	No <input type="checkbox"/>
b. Accepted subject to modification	Yes <input type="checkbox"/>	No <input type="checkbox"/>
c. Rejected with comments and advice to guide future submissions	Yes <input type="checkbox"/>	No <input type="checkbox"/>
d. Rejected	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Please make any additional comments here:

Signature of reviewer K. Howells
Name: Dr Kristy Howells
Date: 27.10.2016

Appendix 10 – Assent form for child

Consent form – Child assent / information form (to be read to the child)

Laura Power: Investigation into the benefits of physical activities of occupational therapy in relation to self-esteem and confidence of a child with dyspraxia.

Masters by Research in PE and Physical Activity.

As you know my name is Miss Power, I'm doing a research on physical activity and occupational therapy. You've been chosen to be part of my research and your parents have given permission for you to be part of the research to measure the benefits of you undertaking occupational therapy.

What I am going to ask you to do is to complete your normal daily occupational therapy, I will make records and notes, just like I normally do within our sessions, but these will be used to help me complete an University project.

By agreeing, it means that you have understood that I will be using some of my notes within my University research.

The SENCO will also sign below to act as a witness to show that I have read the above to you and you have understood what I have said.

..... SENCO's signature

Appendix 11 – SENCO consent form

Consent form – SENCO permission form

Laura Power: Investigation into the benefits of physical activities of occupational therapy in relation to self-esteem and confidence of a child with dyspraxia.

Masters by Research in PE and Physical Activity.

Dear Phyl,

As you know I am wishing to undertake a Masters by Research in PE and Physical Activity within your school. I am looking at potential benefits of physical activities within occupational therapy and how they may contribute to self-esteem and confidence of a child with dyspraxia.

Your school and the child with dyspraxia have been chosen to be part of my physical activity research. What this would involve is Child A completing their regular daily occupational therapy, and I will measure their physical progress of their set movements following their dyspraxia report and any changes in their self-esteem throughout the year. There will be no change to their regular occupational therapy that I deliver, I will observe and analyse in further detail for the Masters the physical and self-esteem of the child throughout the year.

Please complete and return the below slip to agree to your school and the child participating in this research. I am grateful for your help and I will keep you, the school, the class teachers and

the parents up to date with regular results from the research, as normal through the half termly progress reports.

Best wishes, Laura Power

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I (SENCO) give permission for Child A to participate in the physical activity research.

Signed..... (SENCO's signature)

Appendix 12 – Consent form for parents

Consent form – Parents information form

Laura Power: Investigation into the benefits of physical activities of occupational therapy in relation to self-esteem and confidence of a child with dyspraxia.

Masters by Research in PE and Physical Activity.

Dear Parents,

My name is Laura Power, I'm a Masters by Research in PE and Physical Activity student at Canterbury Christ Church University as well your support teacher for your child's occupational therapy. I am investigating the potential benefits of physical activities within occupational therapy and how they may contribute to self-esteem and confidence of a child with dyspraxia.

Your child have been chosen to be part of my physical activity research. What this would involve is your child completing their regular daily occupational therapy, and I will measure their physical progress of their set movements following their dyspraxia report and any changes in their selfesteem throughout the year. There will be no change to their regular occupational therapy that I deliver, I will observe and analyse in further detail for the Masters the physical and self-esteem of your child throughout the year.

Please complete and return the below slip to agree to your child participating in this research. I am grateful for your help and I will keep you, the school, the class teachers up to date with regular results from the research, as normal through the half termly progress reports.

Best wishes, Laura Power

.....
.....
.....

I (parent's name) give permission for my child.....
(child's name) to participate in the physical activity research.

Signed..... (parent's signature)

Appendix 13 – Copy of the over arching descriptive table

Self esteem emotive responses

1	I've been feeling good about the future.
8	I've been feeling good about myself.
14	I've been feeling cheerful.

Self esteem lateral responses

2	I've been feeling useful.
6	I've been dealing with problems well.
10	I've been feeling confident.
11	I've been able to make up my own mind about things.

Psychological cognitive

7	I've been thinking clearly
13	I've been interested in new things

Physiological responses

3	I've been feeling relaxed.
5	I've had energy to spare.

Relationships

4	I've been feeling interested in other people.
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9	I've been feeling close to other people.	Looks forward to weekend events, seeing friends and family and the holidays. This is motivational for Positive praise and reinforcement makes the child more focused with work and supports concentration, confid Head turning activity supports relaxation and a time to be a ease. Confidence with engaging with the resisted crawl activity is improving. Believing in herself when she sees the physical improvement being made during O.T.	Worry and exam pressures detriment positive thoughts for the future and hinder happiness.	Likes to plan future events with friends outside of school.
12	I've been feeling loved.	Looks forward to seeing Mum at weekends and doing activities (11/11/16) Wants to show friends art work that has been done. Productivity and accomplishing tasks supports happiness/feeling cheerful.	Gets excited about school trips that are commencing.	
Happy and at ease when exams are finished. No more pressure or stress.				
None seen for 2. Likes the support from Mum to help with worries.				
Having future events to look forward to suppresses exam worries. The rolling activity supports the ability to think and concentrate. Also, suppresses worry and exam pressures. Head turning supports the ability to deal with worry and exams pressures. Calms the body and mind.				
Monday morning tiredness detracts her confidence to partake to full potential. Needs praise and positivity. Has built confidence with the resisted crawl activity and can fully focus and concentrate. The ability to concentrate, focus and put effort into the physical aspects of O.T, boosts confidence. When its wet play time, gets to O.T sessions on time due to no other distractions from outside.				
Rolling activity within OT activity supports ability to think clearly Exam pressures impacted on ability to think clearly				
Chatted about buying new book and going away on holiday Interested about countries that she will be visiting.				
The research child can relax and engage with the activities when life is running smoothly for her. Relaxed when there are no exams. Head turning supports the research child's stress levels by feeling at ease and relaxed during this activity. Calms the mind and body. When there are no exams the research child is more on task and has more energy and motivation to participate.				
Lacks energy on a Monday to participate due to busy weekends. Easily distracted when feeling tired. Monday's and Tuesday's the child has less energy and motivation. 'Scaffolding' of activities is required.				
Friday's seem to be a day with lots of energy. Likes to share personal successes with others.				
Wet playtimes gives research child opportunities to talk to her friends. Seems happy to discuss things with friends. Not feeling comfortable when someone 'new' joins her friendship group. Likes her Mums company and the socialising with her. (15/12/16)-rolling Will go along with whatever her two friends are doing at times, for her sense of security from them and not be Wants to socialise with friend outside of school and include her in her life. On a Friday, looks forward to seeing her Mum for attention and closeness.(9/12/16)				
Term 2 (Jan-Feb,2017) Free notes Near future events gives the child feelings of excitement and joy.	Term 3 (Feb-Mar, 2017) O.T notes Excited and happy about the Easter holidays and being a bridesmaid.	Term 3 (Feb-Mar,2017) Free notes Looking forward to being productively involved in aunts wedding.		

The research child is building the confidence and persevering with her netball skills.	the confidence to show the researcher a photo of herself that she is proud of. Feeling proud that she can crawl 10 metres in the resisted crawl activity now.	Feeling good that playing netball is making her stronger.
New experiences to engage with make the research child happy.	Head turning creates positive thoughts and happiness. Cats activity has improved, increased motivation and positivity. Energy levels have risen due to a good night sleep, releasing more energy to be happy.	Happy to talk about family positively and that it makes her happy. Feels happy and confident to initiate netball practice with friends. Happy to be in the company of her friends.
None seen for 2. None seen for 6.	Likes to contact Mum to discuss matters. Finds O.T difficult due to Missing Mum after a holiday Likes to deal with tiredness and missing home life by using her own comforts and resting.	Draws pictures to show her family and friends, gives her purpose to show what she has done at school Defends own abilities and replies to criticism positively. Acknowledges negativity and doesn't want to be a part of it. Wants to share her bridesmaid experience
By the 10/2/17, built up the confidence to ripstick without any help, taking time in building up the balance and confidence to teach her friends netball skills that she has obtained. Perseverance and showing willing.	Confident to show researcher a photograph of herself in a dress that she is happy about. Cats activity has improved and the research child feels positive and motivated. Becoming stronger and fitter by doing O.T activities is improving self-confidence and self-esteem	Feeling confident to compete against friends. Increased sport at lunchtimes has boosted self-esteem and confidence. Has the confidence to go alone and ripstick. This is an improvement that the researcher has observed
Determined in her own choices that she makes, going alone to art room, spending time on own. chooses to be productive with her free time to improve her netball skills. Thinking clearly about her technique whilst engaging with ball skills.	None to show. Tiredness after a weekend, affects the ability to think clearly.	Makes up her own mind and using own initiative of playing netball. Shares acquired knowledge about netball. Thought about how she wants to apply her skills with Engaging with netball practice at lunchtimes is supporting the concentration with O.T: motivated by seeing
Clear thoughts of what she is doing whilst ripsticking. Happy to have engaged with a different lunch from normal and hoping to have Chinese food again. Interested in what her friend is doing and would like to do the same. For example, see a new show. Thinking about and informing her friend of what has to be done during a chest pass in netball. Happy to be in own company and to sit down and relax with her book.	Interested in to what the researcher is doing in the Easter holidays If something outside is of interest, can get distracted from her O.T tasks. The head turning activity gives the child an opportunity to fully relax the body and to 'switch off	Looking forward to a new experience of being a bridesmaid. The child can have alone time to do art work at her own leisure, happy to be on own.
Good night's sleep, enjoying a new sport enhances performance in O.T due to having more motivation to initiate netball in her own spare time and uses initiative and effort to practise netball skills. Puts effort into without any influences from others.	Upon the return from a holiday, tiredness and fatigue affects energy levels.	Now has the confidence to ripstick Showing perseverance and teaching friend's knowledge, skills that she has acquired. Initiates to
Interested into what her friends are doing. When friend approaches another group, the research child walks over to one to one contact or small groups. Initiates playing netball and playing outside with friends. Likes to share netball knowledge with friends.	Looking forward to being a bridesmaid and being productively involved in her auntie's wedding Interested in to what her friends achievements are.	Likes the comfort of her two friends, being in their company.
Looks forward to be spending the holidays with loved ones.	Likes comfort from parents and wanting to spend time with them, especially upon returning back	Feeling close to friends by sharing netball experiences with them and not wanting to engage with
None seen for 12.	None seen for 12.	Looking forward to being a bridesmaid and being productively involved in her auntie's wedding

Appendix 14 Copy of cat and resisted crawl data to show unsuccessful (0) and successful (1) body movements for all of the three terms.

Appendix 14 Copy of the cat and resisted crawl data to show unsuccessful (0) and successful (1) body movements for all of the three terms.

Cat		Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Fri	Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Fri
		07/11/2016	08/11/2016	09/11/2016	10/11/2016	11/11/2016	14/11/2016	15/11/2016	16/11/2016	17/11/2016	18/11/2016
Head	Drop head smoothly.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Head	Look down between knees.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Head	Keep head down whilst maintain stillness for five seconds.	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00
Head	Head back up to look forwards.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Arms / Hand	Arms straight.	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Arms / Hand	Hands flat.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Arms / Hand	Thumbs out.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Body	Ensure arching of the back supports posture of the body.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00
Body	Four square' position needed to support core stability.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Keep knees still	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Keep feet still	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Average for overall movement		0.55	0.45	0.91	0.91	1.00	0.55	0.45	0.91	1.00	1.00

Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Fri	Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Fri	Average for bo	Body part average
22/11/2016	23/11/2016	24/11/2016	25/11/2016	05/12/2016	06/12/2016	07/12/2016	08/12/2016	09/12/2016	12/12/2016	13/12/2016	14/12/2016	15/12/2016	16/12/2016		
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.72
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.75
0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	
0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.55	0.84
1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	
0.27	1.00	1.00	1.00	0.73		0.55	0.55	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Cat		Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri	Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri	Term 2 Wed	Term 2 Thurs	Term 2 Fri
		16/01/2017	17/01/2017	18/01/2017	19/01/2017	20/01/2017	23/01/2017	24/01/2017	25/01/2017	26/01/2017	27/01/2017	01/02/2017	02/02/2017	03/02/2017
Head	Drop head smoothly.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Head	Look down between knees.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Head	Keep head down whilst maintain stillness for five seconds.	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Head	Head back up to look forwards.	0	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Arms / Hand	Arms straight.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Arms / Hand	Hands flat.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Arms / Hand	Thumbs out.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Body	Ensure arching of the back supports posture of the body.	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Body	Four square' position needed to support core stability.	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Keep knees still.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Keep feet still.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Average for overall movement		0.18	0.27	0.73	0.91	1.00	0.18	0.27	0.55	0.73	0.73	0.36	0.82	0.73

Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri	Average for bo	Body part average
06/02/2017	07/02/2017	08/02/2017	09/02/2017	10/02/2017		
1.00	1.00	1.00	1.00	1.00	0.72	
1.00	1.00	1.00	1.00	1.00	0.72	
1.00	1.00	1.00	1.00	1.00	0.44	0.63
1.00	1.00	1.00	1.00	1.00	0.71	
1.00	1.00	1.00	1.00	1.00	0.72	0.69
1.00	1.00	1.00	1.00	1.00	0.72	
1.00	1.00	1.00	1.00	1.00	0.72	
1.00	1.00	1.00	1.00	1.00	0.28	
1.00	0.00	1.00	1.00	1.00	0.89	
1.00	1.00	1.00	1.00	1.00	0.83	
0.00	1.00	1.00	1.00	1.00	0.72	0.78
0.00	1.00	1.00	1.00	1.00		
0.82		1.00	1.00	1.00		

		Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri	Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri	Term 2 Wed	Term 2 Thurs	Term 2 Fri
Cat		16/01/2017	17/01/2017	18/01/2017	19/01/2017	20/01/2017	23/01/2017	24/01/2017	25/01/2017	26/01/2017	27/01/2017	01/02/2017	02/02/2017	03/02/2017
Head	Drop head smoothly.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Head	Look down between knees.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Head	Keep head down whilst maintain stillness for five seconds.	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Head	Head back up to look forwards.	0	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Arms / Hand	Arms straight.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Arms / Hand	Hands flat.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Arms / Hand	Thumbs out.	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Body	Ensure arching of the back supports posture of the body.	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Body	Four square' position needed to support core stability.	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Keep knees still.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Keep feet still.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00
Average for overall movement		0.18	0.27	0.73	0.91	1.00	0.18	0.27	0.55	0.73	0.73	0.36	0.82	0.73

	Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri	Average for bo Body part average	
	06/02/2017	07/02/2017	08/02/2017	09/02/2017	10/02/2017		
	1.00	1.00	1.00	1.00	1.00	0.72	
	1.00	1.00	1.00	1.00	1.00	0.72	
	1.00	1.00	1.00	1.00	1.00	0.44	0.63
	1.00	1.00	1.00	1.00	1.00	0.71	
	1.00	1.00	1.00	1.00	1.00	0.72	0.69
	1.00	1.00	1.00	1.00	1.00	0.72	
	1.00	1.00	1.00	1.00	1.00	0.72	
	1.00	1.00	1.00	1.00	1.00	0.28	
	1.00	0.00	1.00	1.00	1.00	0.89	
	1.00	1.00	1.00	1.00	1.00	0.83	
	1.00	1.00	1.00	1.00	1.00	0.72	0.78
	0.00	1.00	1.00	1.00	1.00		
	0.00	1.00	1.00	1.00	1.00		
	0.82		1.00	1.00	1.00		

		Term 3 Mon	Term 3 Tues	Term 3 Wed	Term 3 Thurs	Term 3 Fri	Term 3 Mon	Term 3 Tues	Term 3 Wed	Term 3 Thurs	Term 3 Fri	Term 3 Mon	Term 3 Tues	Term 3 Fri	
		20/02/2017	21/02/2017	22/02/2017	23/02/2017	24/02/2017	27/02/2017	28/02/2017	01/03/2017	02/03/2017	03/03/2017	06/03/2017	07/03/2017	10/03/2017	
Cat															
Head	Drop head smoothly.	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	
Head	Look down between knees.	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	
Head	Keep head down whilst maintain stillness for five seconds.	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	
Head	Head back up to look forwards.	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
Arms / Hand	Arms straight.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Arms / Hand	Hands flat.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Arms / Hand	Thumbs out.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Body	Ensure arching of the back supports posture of the body.	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Body	Four square' position needed to support core stability.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Legs / feet	Keep knees still.	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Legs / feet	Keep feet still.	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Average for overall movement		0.55	0.55	0.64	1.00	1.00	0.73	0.73	1.00	1.00	1.00	1.00	1.00	0.73	0.64

	Term 3 Mon	Term 3 Tues	Term 3 Wed	Term 3 Thurs	Term 3 Fri	Average for bo	Body part avei
	13/03/2017	14/03/2017	15/03/2017	16/03/2017	17/03/2017		
	0.00	1.00	0.00	1.00	1.00	0.67	
	0.00	1.00	0.00	1.00	1.00	0.61	
	0.00	1.00	0.00	1.00	1.00	0.61	0.63
	0.00	1.00	1.00	1.00	1.00	1.00	
	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	1.00	1.00	1.00	1.00	1.00	0.72	
	1.00	1.00	1.00	1.00	1.00	1.00	
	1.00	1.00	1.00	1.00	1.00	0.89	
	1.00	1.00	1.00	1.00	0.00	0.78	0.83
			0.73		1.00	0.91	
	0.64						

<i>Resisted Crawl</i>		Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Fri	Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Fri
		07/11/2016	08/11/2016	09/11/2016	10/11/2016	11/11/2016	14/11/2016	15/11/2016	16/11/2016	17/11/2016	18/11/2016
Head	Head up	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Head	Eyes maintain focal point	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Head	Look forward	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Arms / Hand	Hand flat and under shoulder	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Arms / Hand	Fingers pointing forward	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Body	Body helps to keep momentum of the crawl to move forwards and backwards	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Body	Opposite arm to leg	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Body	Crawl for about 10 m	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Body	Start in the four square position	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Body	Good core stability is needed	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Knees under hips	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Feet flat and slide along the floor during the exercise	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Average for overall movement		1.00	1.00	1.00	1.00	1.00	0.83	1.00	1.00	1.00	1.00

Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Fri	Term 1 Monday	Term 1 Wed	Term 1 Thurs	Term 1 Fri	Term 1 Monday	Term 1 Tuesday	Term 1 Wed	Term 1 Thurs	Term 1 Fri	Average for bo	Body part average
22/11/2016	23/11/2016	24/11/2016	25/11/2016	26/11/2016	05/12/2016	07/12/2016	08/12/2016	09/12/2016	12/12/2016	13/12/2016	14/12/2016	15/12/2016	16/12/2016		
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	
0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	
0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.82
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.95	0.98
0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	
0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.90	
0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88
0.42	1.00	1.00	1.00	1.00	0.50		0.67	0.67	1.00	0.83	1.00	1.00	1.00	1.00	1.00

Resisted Crawl		Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri	Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri
		16/01/2017	17/01/2017	18/01/2017	19/01/2017	20/01/2017	23/01/2017	24/01/2017	25/01/2017	26/01/2017	27/01/2017
Head	Head up	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Head	Eyes maintain focal point	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Head	Look forward	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00
Arms / Hand	Hand flat and under shoulder	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00
Arms / Hand	Fingers pointing forward	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00
Body	Body helps to keep momentum of the crawl to move forwards and backwards	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Body	Opposite arm to leg	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Body	Crawl for about 10 m	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Body	Start in the four square position	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00
Body	Good core stability is needed	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
Legs / feet	Knees under hips	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00
Legs / feet	Feet flat and slide along the floor during the exercise	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Average for overall movement		0.00	0.17	0.67	0.75	1.00	0.17	0.17	0.42	0.67	0.58

Term 2 Wed	Term 2 Thurs	Term 2 Fri	Term 2 Monday	Term 2 Tuesday	Term 2 Wed	Term 2 Thurs	Term 2 Fri	Average for bo	Body part avei
01/02/2017	02/02/2017	03/02/2017	06/02/2017	07/02/2017	08/02/2017	09/02/2017	10/02/2017		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	
0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.61	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.76
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.56	0.61
0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.33	
0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.39	
1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.44	
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.56	
0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.44	0.43
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	
0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.83

#REF! #REF! 0.25 0.83 0.83 0.75 0.92 1.00 1.00

		Term 3 Mon	Term 3 Tues	Term 3 Wed	Term 3 Thurs	Term 3 Fri	Term 3 Mon	Term 3 Tues	Term 3 Wed	Term 3 Thurs	Term 3 Fri
		20/02/2017	21/02/2017	22/02/2017	23/02/2017	24/02/2017	27/02/2017	28/02/2017	01/03/2017	02/03/2017	03/03/2017
Resisted Crawl											
Head	Head up	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Head	Eyes maintain focal point	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Head	Look forward	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Arms / Hand	Hand flat and under shoulder	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Arms / Hand	Fingers pointing forward	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Body	Body helps to keep momentum of the crawl to move forwards and backwards	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Body	Opposite arm to leg	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Body	Crawl for about 10 m	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Body	Start in the four square position	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Body	Good core stability is needed	0.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Legs / feet	Knees under hips	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Legs / feet	Feet flat and slide along the floor during the exercise	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Average for overall movement 0.33 0.33 0.58 1.00 1.00 0.50 1.00 1.00 1.00 1.00

Term 3 Mon	Term 3 Tues	Term 3 Fri	Term 3 Mon	Term 3 Tues	Term 3 Wed	Term 3 Thurs	Term 3 Fri	Average for bo	Body part avei
06/03/2017	07/03/2017	10/03/2017	13/03/2017	14/03/2017	15/03/2017	16/03/2017	17/03/2017		
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	
1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.78	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.78	
1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.67	0.72
1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.78	
1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.72	
1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.78	
1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.89	
1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.72	0.78
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.94	0.97
1.00	0.92	0.58	0.83		1.00	1.00	1.00		

Appendix 15 – Results of successful and unsuccessful points of resisted crawl and cat.The graphs illustrate the successful and unsuccessful points of the Resisted crawl and Cat activities during three school terms that data was collected in.

Key - The trend of success for resisted crawl and cat is represented on the graphs as (1) being able to perform body movements and (0) not being able to perform body movements.

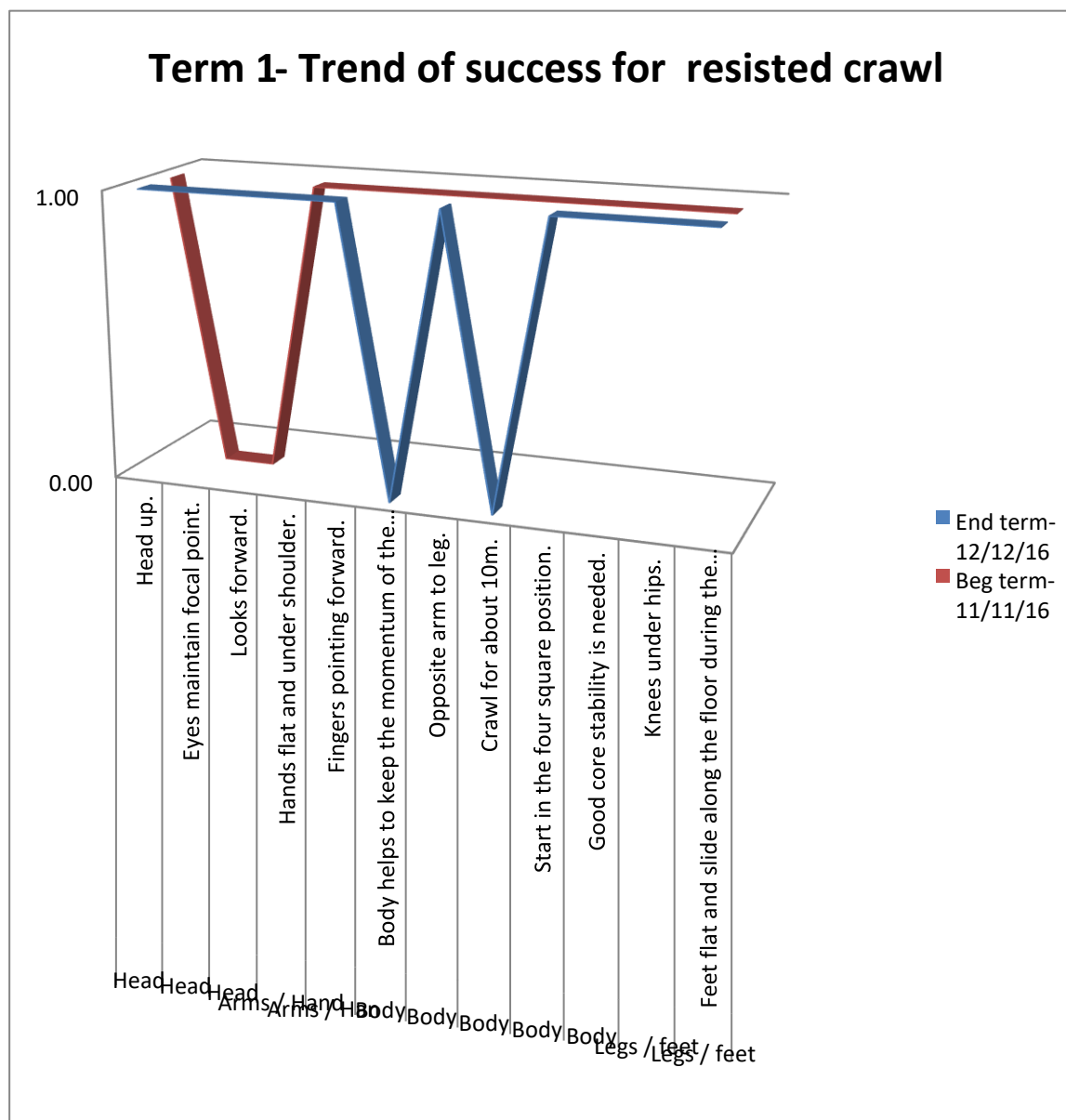


Figure A - illustrates the successful and unsuccessful points of the resisted crawl during term 1. Sue was unsuccessful at two days. One at the beginning of term and one at the end of term.

At the beginning of term when Sue was unsuccessful, she was not able to complete aspects of head (eyes maintaining focal point, looks forward). At the end of term, she was not able to complete aspects of the body (body helps to keep the momentum of the crawl to move forwards and backwards and crawl for about 10 metres).

However, at the beginning of term Sue was successful on the aspects of head (head up); arms/hands (hands flat and under shoulder, fingers pointing forward); body (body helps to keep the momentum of the crawl to move forwards and backwards, crawl for about 10 metres, start in the four square position, good core is needed); legs/feet (knees under hips, feet flat and slide along the floor during the exercise). At the end of term Sue was successful on the aspects of head (head up, eyes maintain focal point, looks forward); arms/hands (hands flat and under shoulders, fingers pointing forward); body (opposite arm to leg, start in four square position, good core stability is needed); legs/feet (knees under hips, feet flat and slide along the floor during the exercise).

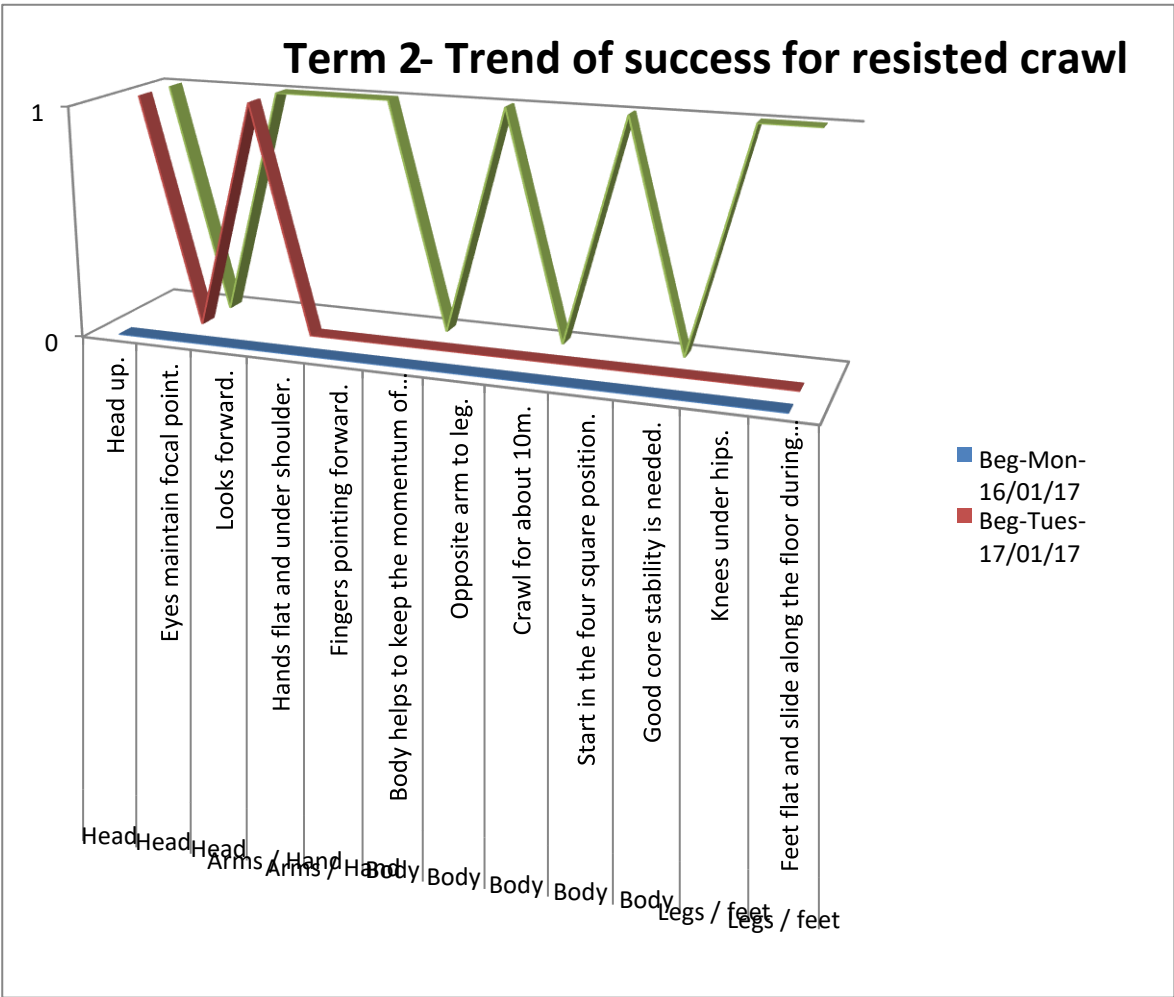


Figure B - illustrates the successful and unsuccessful points of the resisted crawl during term 2. Sue was unsuccessful at 3 days; 3 days in a row, all at the beginning of term.

When Sue was unsuccessful, she was not able to complete any aspects of the body movements at the beginning of the week. Sue was not able to complete aspects of the body; (crawl for about 10 metres, good core stability is needed) on Tuesday. Sue was not able to complete aspects of head (not able to look forward); body (opposite arm to leg, four square position, good core stability is needed); legs/feet (knees under hips, feet flat and slide along the floor during the exercise) on all three days.

However, Sue was successful on the aspects of head (head up, looks forward); arms/hands (hands flat under shoulder) on Tuesday and Wednesday. Arms/hands (fingers pointing forward); body (opposite arm to leg, start in the four square position); legs/feet (knees under hips, feet flat and slide along the floor during the exercise) on Wednesday.

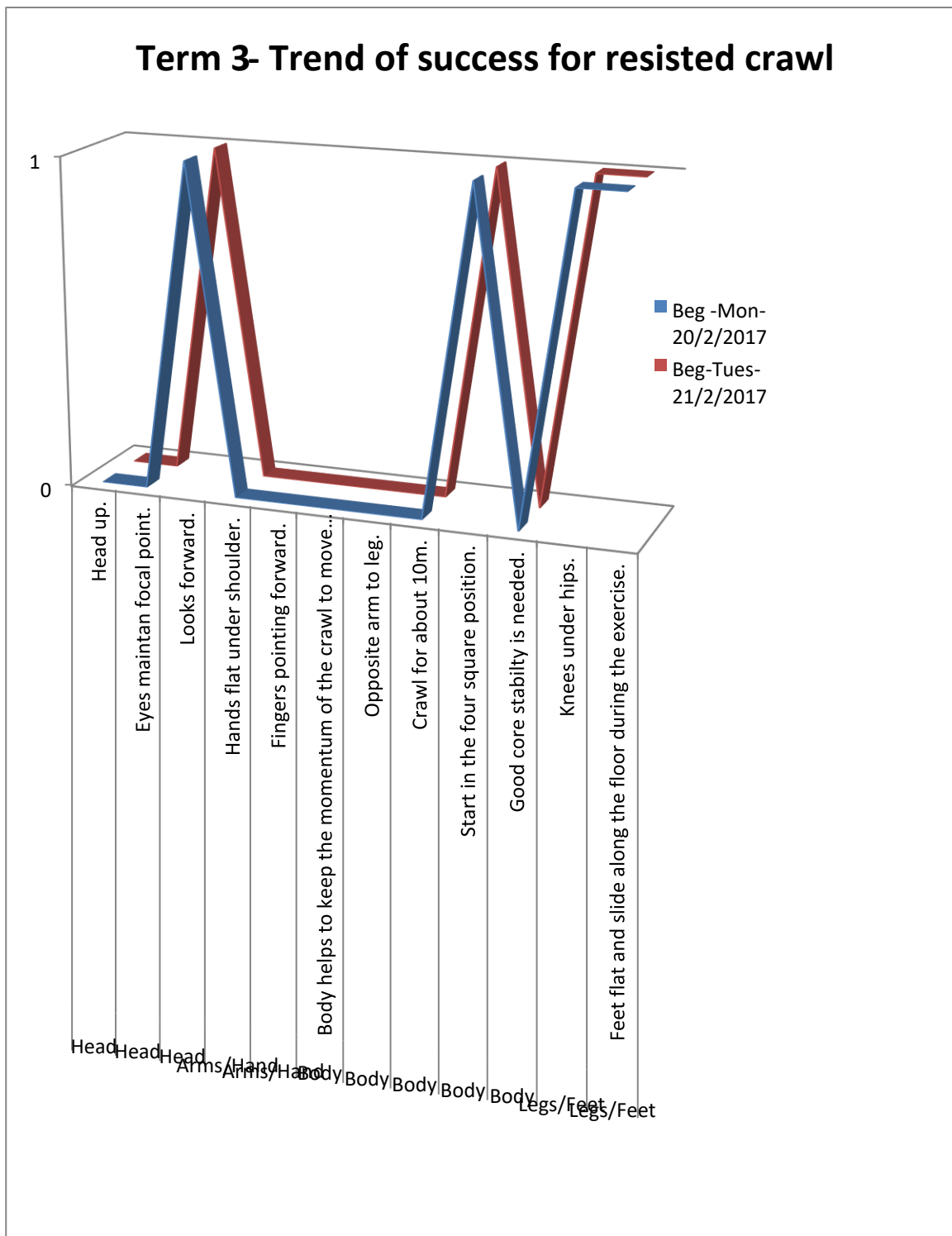


Figure C - illustrates the successful and unsuccessful points of the resisted crawl during term 3. Sue was unsuccessful at 2 days; 2 days in a row, all at the beginning of term.

When Sue was unsuccessful, on both days, she was not able to complete aspects of the head (head up, eyes maintain on focal point); arms/hands (hands flat under shoulder, fingers pointing forwards); body (body helps to keep the momentum of the crawl to

move forwards and backwards, opposite arm to leg, crawl for about 10 metres, good core stability is needed).

However, Sue was successful on the aspects of head (looks forward); body (start in the four square position); legs/feet (knees under hips, feet flat and slide along the floor during the exercise).

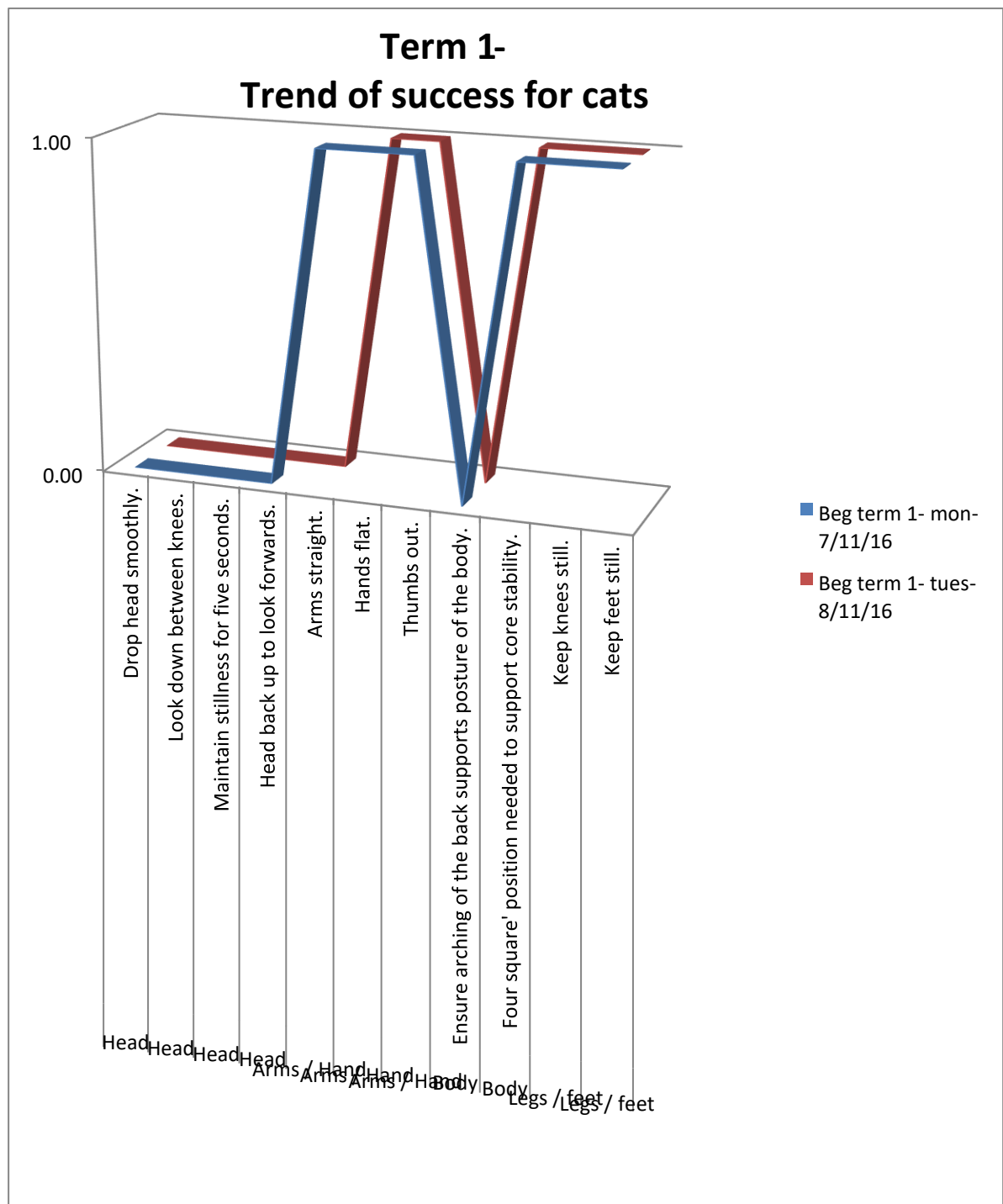


Figure D - illustrates the successful and unsuccessful points of the Cats activity. Sue was unsuccessful at 2 days; 2 days in a row, all at the beginning of term.

When Sue was unsuccessful, she was not able to complete aspects of the head (drop head down smoothly, look down between knees, maintain stillness for five seconds); body (ensure arching of the back supports the body) on both days. She was not able to complete aspects of the arms/hands (arms straight, hands flat) on Tuesday.

However, Sue was successful on the aspects of arms/hands (arms straight) on Monday. She was successful on the aspects of arms/hands (hands flat, thumbs out) ; body (four square position needed to support core stability); legs/feet (keep knees still, keep feet still) on both days.

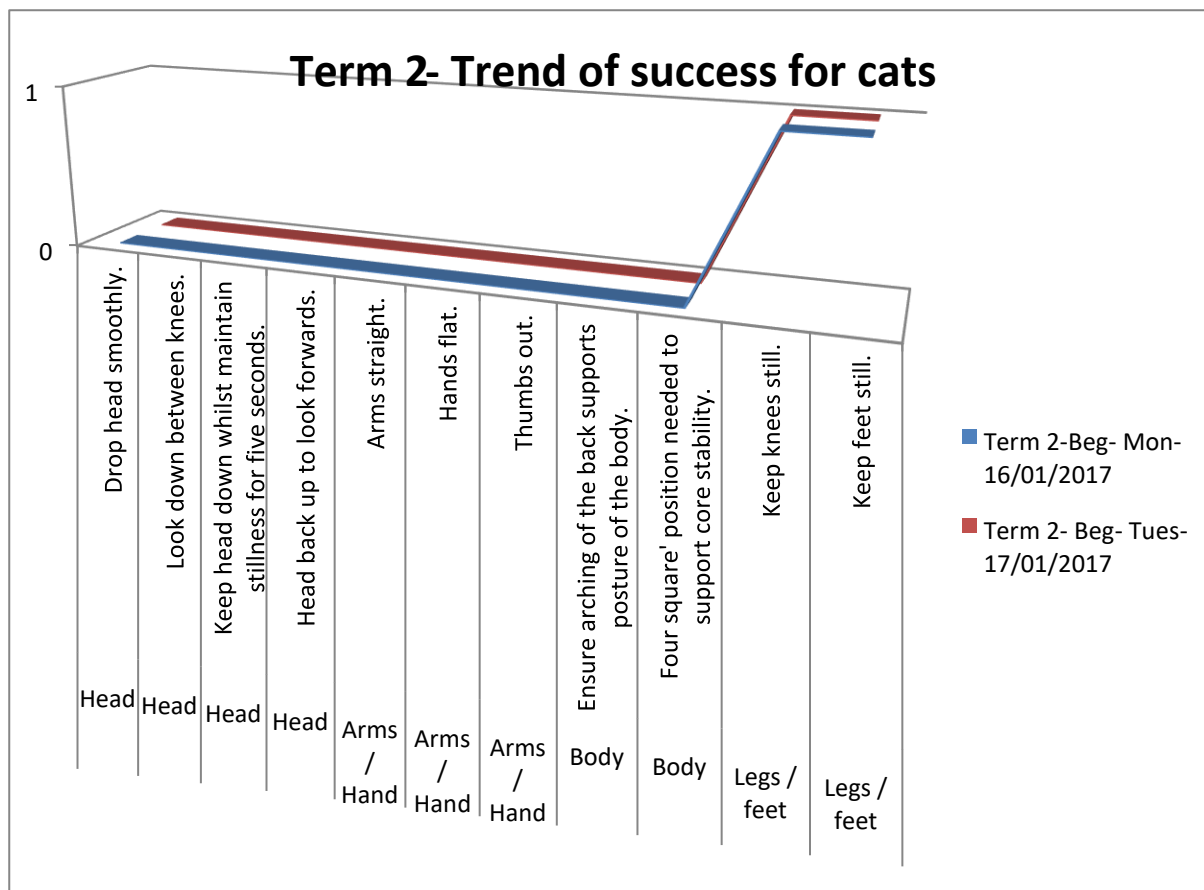


Figure E - illustrates the successful and unsuccessful points of the cats activity during term

2. Sue was unsuccessful at 2 days; 2 days in a row, all at the beginning of term.

When Sue was unsuccessful, on both days, she was not able to complete aspects of head (drop head smoothly, look down between knees, keep head down whilst maintain stillness for five seconds, head back up to look forwards); arms/hands (arms straight, hands flat, thumbs out); body (ensure arching of the back supports posture of the body, four square position needed to support core stability).

However, Sue was successful, on both days, on the aspects of legs/feet (keep knees still, keep feet still).

Term 3- Trend of success for cats

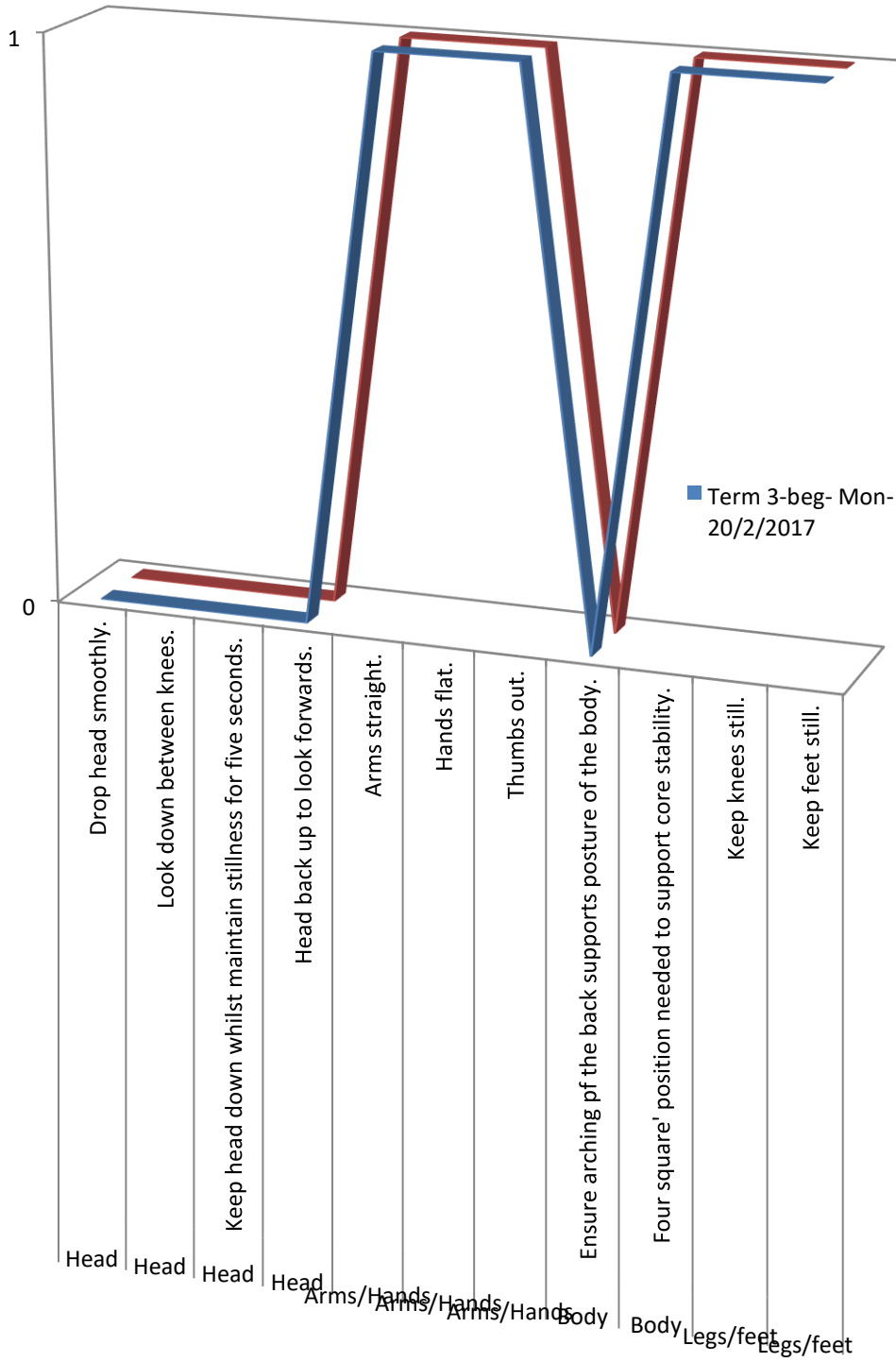


Figure F - illustrates the successful and unsuccessful points of the cat activity during term 3. Sue was unsuccessful at 2 days; 2 days in a row, all at the beginning of term.

When Sue was unsuccessful, on both days, she was not able to complete aspects of head (drop head smoothly, look down between knees, keep head down whilst maintain stillness for five seconds); body (ensure arching of the back supports posture of the body).

However, Sue was successful, on both days, on the aspects of head (head back up to look forwards); arms/hands (arms straight, hands flat, thumbs out); body (four square position needed to support the body); legs/feet (keep feet still/keep knees still).

