

THE LIVED EXPERIENCE OF ADOLESCENTS WITH
DEVELOPMENTAL COORDINATION DISORDER TRANSITIONING
FROM PRIMARY SCHOOL TO SECONDARY SCHOOL

A DESCRIPTIVE PHENOMENOLOGICAL ANALYSIS

SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE
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Chapter One: Introduction

1.1 Introduction

This section provides an introduction to the study and includes a brief background to the research process, aims and objectives. The rationale for including this section is to orientate the reader to the dissertation. A more complete discussion of methodological issues is presented in the methodology chapter which follows the literature review in this thesis.

1.2 Background and Justification

Developmental Co-ordination Disorder (DCD) affects approximately 6% of school-aged children (Vaivre-Douret, 2014). Children with DCD can have an array of occupational performance problems, many of which could affect them at school, including problems with handwriting, finishing work on time and with Physical Education (PE) (Dunford et al., 2005). They can also have problems with dressing, personal hygiene, using feeding utensils and with maintaining an upright posture at meal times (Miller et al., 2001; Summers et al., 2008). The social development of children with DCD can be affected as they can be more limited than their peers in their participation in free play and in their involvement in organised social activities, especially those of a sporting nature (Chen & Cohn 2003; Cairney et al., 2005). These occupational problems can have an impact on their psychological well-being (Cocks, Barton & Donnelly, 2009), although it is important to be aware that this is not always the case (Watson & Knott, 2006). The condition can also have a long-term impact on their attitude to exercise and their overall fitness levels in the future (Missiuna, Rivard & Bartlett 2006; Schott et al., 2007).

The majority of research relating to DCD involves children under twelve, and whilst there has been an increased interest in the older population in recent years there remains a need for further research with this adolescent population (Tal-Saban et al., 2012). It has been estimated that more than 50,000 young people in Ireland transition from primary school to secondary school every year (Smyth et al., 2004).

Chapter One: Introduction

There may be as many as 3000 of these students with DCD, as this condition affects approximately 6% of school-aged children (Vaivre-Douret, 2014). The transition to some form of equivalent secondary education, e.g. middle school in the American context, is a common international experience and thus this is an important area of research. A review of the literature demonstrated that there is a dearth of research exploring the transition of students with DCD from primary school to secondary school. There is a clear gap in the research pertaining to this population at this significant life stage. As outlined above, people with DCD can experience a range of difficulties which could impact them in the school setting. It is important to ascertain if the needs of students with DCD are being accommodated for as they transition from primary school to secondary school. It is also important to allow these young people a voice in order to learn 'from them' rather than learn 'about them' from others, these students are the 'experts' in their own experience. It is hoped that the findings from this research could be used to improve the experience of students with DCD as they transition from primary school to secondary school.

1.3 Research Aims and Objectives

Aim:

The aim of the research was to explore the lived experience of transitioning into secondary school by adolescents with DCD.

Objective:

To discover the meaning of transitioning into secondary school as it appears to adolescents with DCD.

1.4 Operational Definitions

Transition into secondary school: For the purposes of this study the transition to secondary school was conceptualised as occurring, approximately, between the final term of primary school and the end of the first term of secondary school.

1.5 Brief Plan of Enquiry

Design

This study used a qualitative methodology with a Descriptive Phenomenological approach (Giorgi, 2009). The phenomenon being explored was the experience of transitioning into secondary school.

Participants

Participants were selected using purposive sampling. All participants had a previous diagnosis of DCD and were in the junior cycle of secondary school.

Data collection

Participants were interviewed about their experiences of transitioning to secondary school using unstructured interviews e.g. 'tell me about your first week at secondary school'. The duration of the interviews varied and was dictated by the length of time needed by the participant. Interviews took place in participants' own homes with a parent or caregiver on the premises. Interviews were audio-taped and transcribed verbatim.

Analysis

Analysis was conducted in five stages (Giorgi, 2009):

1. The transcripts were read and re-read in order allow for immersion in the data and the assuming of a psychological perspective.
2. The transcripts were transformed into meaning units.
3. Meaning units were transformed into phenomenological and psychologically sensitive expressions.
4. The 'transformations' were analysed to ascertain what experiences were typically essential to the concrete experiences reported ('structures').
5. These structures were then analysed to find a central structure for the experience.

1.6 Brief Outline of the Thesis

The following chapters of this thesis include a review of the relevant literature, which will be followed by an analysis of the philosophical underpinnings to the research methodology and approach used. The research process will be discussed in-depth and the findings of the study will then be presented. The final chapter of this thesis is the discussion and conclusions and includes a synthesis of the research findings with the literature reviewed. The novel findings from this study will be discussed and recommendations for future research and actions will be given.

Chapter Two: Literature Review

2.1 Introduction

This chapter consists of an appraisal of the literature pertinent to the research question. The first section is a review of articles concerning the nature, aetiology and impact of DCD, along with a consideration of the conditions that are co-morbid with it. This section was included to provide a background to the study, and was needed in the formation of the inclusion and exclusion criteria for recruiting participants. The next section contains a review of the literature pertaining to typical adolescence. This was completed so that the developments that are typical, could be distinguished from those that are distinct to adolescents with DCD. A section which focused on DCD in adolescence followed this one. The next section concerned the nature of transitions and the context of transitioning to secondary school in Ireland. The final section contained a review of studies conducted in Ireland and the UK involving students, both with and without Special Educational Needs (SEN), transitioning to secondary school. Overall, this review was designed to provide an analysis of the literature pertinent to the research question, so that the results of this study could be interpreted in relation to previous research, and so that it would be possible to determine if any novel findings had emerged.

The majority of the literature review was conducted after the data collection and analysis was completed. This was done in order to aid the process of 'bracketing' knowledge that could cause undue presumption when interviewing the participants and analysing their narratives. The first section, pertaining to the nature of DCD, was predominantly completed before data collection, as an in-depth understanding of the condition was required in order to ensure that the participants recruited met the inclusion criteria of having DCD. This section was then updated post the analysis so that any relevant literature published in the interim period could be included. Some preliminary research was also conducted into the theories regarding the definition and process of transitions so that the participants could be asked to describe experiences within a relevant timeframe.

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The following data bases were consulted when gathering literature for this review: AMED, CINAHL, EMBASE, ERIC, MEDLINE, PsycARTICLES, and SCOPUS. Relevant terms for each aspect of the review (Appendix 1) were combined using Boolean logic and articles were only accepted from peer reviewed academic journals, with all articles needing to be in the English language. The reference lists of these articles were used to locate further material to be reviewed and the date for commencement of the search (unless otherwise stated in the subsections of the review) was not set, so that any pivotal articles from the past could be included. Relevant books, monographs and government publications were included, where appropriate, in this review.

2.2 Developmental Coordination Disorder

Diagnostic Criteria

This section contains a discussion of the diagnostic criteria for DCD, along with its aetiology, sub-types and co-morbid conditions. DCD affects approximately 5-8% of school children (Dewey & Wilson, 2001) and the ratio of males to females has been found to range from 2:1 to 7:1 (Blank et al., 2012). The condition has been described using a variety of terms including clumsy child syndrome, developmental dyspraxia and sensory integration dysfunction (Magalhaes et al., 2006). At a 1994 international meeting on 'Children and Clumsiness' held in London, Ontario, Canada, the term 'Developmental Co-ordination Disorder' was agreed upon, in order to create consensus in terminology and to facilitate standardisation in published research (Polatajko et al., 1995).

The term 'Developmental Coordination Disorder' is used in both the Diagnostic and Statistical Manual (DSM) for Mental Disorders (American Psychiatric Association 1994; 2000; 2013) and the International Classification of Diseases and Related Health Problems (World Health Organization, 1992; 1993).

The DSM IV outlined four accepted criteria for the diagnosis of DCD:

- A. A marked impairment in the development of motor coordination.
- B. This impairment interferes with academic achievement or activities of daily living.
- C. The impairment is not due to another medical condition or Pervasive Developmental Disorder.
- D. If an intellectual disability is present, the motor difficulties are in excess of those usually associated with it.

(American Psychiatric Association, 2000)

A group of international experts in the area of DCD conducted a series of meetings in order to bring greater clarity to each of the DSM IV criteria. The meetings

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resulted in the establishment of the Leeds Consensus statement (Economic and Social Research Council, 2006) which was seen as a follow-on from the 1994 meetings in London, Canada. The European Academy for Childhood Disability (EACD) (Blank et al., 2012) made further recommendations on the basis of an extensive review of the literature, two consensus conferences and a review by a group of European experts which included Delphi rounds.

The Leeds consensus statement (Economic and Social Research Council, 2006) recommended that criterion A be assessed using an individually administered and culturally appropriate norm referenced test of general motor competence. They also recommended that the cut off point for the condition be at the 5th percentile, though they acknowledged that the 15th percentile is often used when conducting research on this population. The EACD (Blank et al., 2012) proposed that the 15th percentile should be used as a cut off point for diagnosis and recommended the use of the Movement Assessment Battery for Children 2 (Henderson & Sugden, 2007). They also recommended that a diagnosis would not be made before the age of five as younger children can exhibit naturally occurring asynchronous motor development and can find it difficult to cooperate with the assessment process at this stage.

Both the Leeds consensus statement (Economic and Social Research Council, 2006) and EACD (Blank et al., 2012) proposed that handwriting should be assessed with regard to criterion B and that assessment should also target

“culturally relevant developmental norms relating to activities of daily living tasks and should include consideration of self-care, play, leisure and schoolwork (including handwriting, PE and tool use) along with the views of the child, parents, teachers and relevant others” (Economic and Social Research Council, 2006, p. 5).

Both groups expressed concern about the lack of acknowledgement of a dual diagnosis in criterion C and both argued that DCD, can and does, co-occur with Pervasive Developmental Disorders. They placed particular emphasis on the co-

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occurrence of DCD with Asperger's Syndrome, Developmental Dyslexia and Attention Deficit Hyperactivity Disorder (ADHD). Both parties also stressed the need for a conventional neurological assessment to be conducted to rule out major neurological conditions such as Cerebral Palsy or Hemiplegia. Finally, they proposed that a standard measure of intelligence should be conducted with regard to Criterion D, and that where this was not feasible, a teacher's opinion or other relevant data such as national tests would be acceptable.

In 2013 the DSM-V was published and the diagnostic criteria for DCD were revised. The exclusion criterion of having a Pervasive Developmental Disorder was removed and the criteria are now as follows:

- A. Acquisition and execution of coordinated motor skills are below what would be expected at a given chronologic age and opportunity for skill learning and use; difficulties are manifested as clumsiness (e.g., dropping or bumping into objects) and as slowness and inaccuracy of performance of motor skills (e.g., catching an object, using scissors, handwriting, riding a bike, or participating in sports)
- B. The motor skills deficit in Criterion A significantly and persistently interferes with activities of daily living appropriate to chronologic age (e.g., self-care and self-maintenance) and impacts academic/school productivity, prevocational and vocational activities, leisure, and play
- C. Onset of symptoms is in the early developmental period.
- D. The motor skills deficits cannot be better explained by intellectual disability (intellectual developmental disorder) or visual impairment and are not attributable to a neurologic condition affecting movement (e.g., cerebral palsy, muscular dystrophy, degenerative disorder)

(American Psychiatric Association, 2013)

Developmental Coordination Disorder – Aetiology

Whilst there are accepted criteria for the diagnosis of DCD, there is a marked lack of uniformity regarding its aetiology (Flouris et al., 2005). Many theories have emerged about the cause of the condition and, arguably, the most plausible of them is that of a deficit of internal modelling (Smits-Engelsman et al., 2003; Williams et al., 2006; Kashiwagi et al., 2009; Adams et al. 2014). Internal modelling theory has its origins in the fields of robotics, mathematics and engineering and is based on the finding that sensori-motor feedback is too slow to allow for efficient motor responses (Wolpert, 1997). The brain needs to form an inverse dynamics model of the object to be controlled, through motor learning, so that motor control can be executed in a feedforward manner (Kawato, 1999). An inverse dynamics model refers to the brain's ability to predict the external forces and position of the object to be controlled or to be responded to, so that a forward dynamics model can be formed to enable the brain to predict the muscle forces and joint movements required in the response (Buchanan et al., 2004). Adams et al. (2014) argue that an internal modelling deficit would be consistent with the inaccurate, laboured and slow movements observed in children with DCD. They argue that this could be caused by a disruption or delay to the parieto-cerebellar axis. Other theories for the cause of the motor problems exhibited in people with DCD include an impairment in visual perceptual function (Wilson & McKenzie, 1998; Van Waelvelde et al., 2004; De Castelneau et al., 2007); an impairment in kinaesthetic perception (Smyth, 1994); and a general cerebellar dysfunction (Cantin et al., 2007). The variety of causes attributed to the condition has led to the hypothesis that subtypes of the disorder may exist (Dewey & Kaplan, 1994).

Hoare (1994) conducted a study which used a cluster analysis in order to ascertain if subtypes of the condition exist. A convenience sample of 79 children with DCD aged between six and nine and 20 typically developing nine year olds took part in the study. Hoare examined the following variables based on a review of the literature: kinaesthetic acuity, visual perception, visual-motor integration, manual dexterity, static balance and gross motor activity (running). The parameters for the

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literature search were not detailed and there was no indication that a systematic review had been conducted in order to establish the variables, thus it is possible that other important variables were excluded. Standardised tests were used to assess the participants' performance on each of the domains and they argued that five distinct clusters emerged:

- cluster 1 (n=22) had relative weaknesses in the running and kinaesthetic acuity tasks, relative strengths in static balance and were within the average range of the participants in the visual perception and visual motor tasks;
- cluster 2 (n=20) had relative strengths on visual perception and visual motor tasks and were within the average of the cohort for tests of kinaesthetic acuity and static balance;
- cluster 3 (n=15) had relative weaknesses in visual motor, visual perception, kinaesthetic acuity and static balance, but were at the mean for the running task; cluster 4 (n=14) had relative strengths in kinaesthetic acuity and running but were within the cohort mean for the other tasks;
- cluster 5 (n=8) were within the relative mean for kinaesthetic acuity, visual perception, visual motor but had relative weaknesses in static balance and running.

The internal validity of the clusters was tested by using different methods of grouping and it was established that the majority of the participants remained in the same cluster irrespective of the method used. Internal validity was also demonstrated by including 20 typically developing children in the analysis; their inclusion did not impact the stability of the clusters. This early study provided some evidence of DCD being a heterogeneous rather than homogenous disorder with the possibility of there being subtypes of the condition.

Green et al. (2008) analysed data from 90 children with DCD. Data were analysed retrospectively from an opportunistic sample of the clinical notes of children who had attended an Occupational Therapy clinic. A factor analysis was used to identify clusters which corresponded to the variables used in the Hoare (1994) study and they concluded that their clusters showed reasonable consistency with those of

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Hoare's. Arguably, the internal validity of the study was challenged by the fact that a typically developing sample of children was not included in the analysis and only one method of cluster analysis was conducted.

Visser (2003) provided further evidence for the heterogeneous nature of DCD, as his review of the literature demonstrated the existence of multiple subtypes with distinct aetiologies, prognoses and treatment requirements. He found that the subtype with a generalised perceptual dysfunction had a high incidence of co-morbidities. This may indicate that problems with visual perception are caused by having a co-morbid condition rather than by the DCD itself. He argued that the condition is best understood as a Minimal Brain Dysfunction with underlying automatization deficit as brain imaging techniques indicate that DCD is not caused by a deficit in any one area of the brain. Arguably, this automatization problem could be caused by a deficit in internal modelling. Visser (2003) acknowledged that the findings were undermined by a lack of conformity throughout the literature regarding the selection criteria for participants, along with the high incidence of comorbid conditions. The validity of this review was also threatened by the lack of clear inclusion and exclusion criteria. However, the review was comprehensive and included a wide range of literature dating from 1982, the topic for the review was clearly defined and the themes and conclusions raised were well substantiated throughout.

Vaivre-Douret et al. (2011) concur that the aetiology of DCD has not been established and postulate that it is connected with maturational processes in the cerebellum, basal ganglia and thalamus. They conducted a study involving 43 children aged between 5 and 15 which was aimed at identifying subtypes of DCD. Participants were assessed as having DCD in the mild to moderate range, however the incidence of co-morbidity was unclear. They carried out a variety of neuropsychological, neuro-motor and neuro-visual assessments along with anatomical magnetic resonance imaging (MRI) scans. They found evidence for the following subtypes:

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1. Ideomotor dyspraxia (n=5): This group presented with problems such as difficulty in the imitation of gestures, digital praxis, and poor body spatial integration.
2. Visual spatial and visual constructional dyspraxia (n=19): This group had problems with visual motor integration, completing puzzles, arithmetic and with handwriting. There was a small subset of this category (n=2) who only had visual spatial problems indicating the possibility of a fourth cluster.
3. Mixed dyspraxia (n=19): This group presented with features of ideomotor and visual spatial / visual constructional dyspraxia and 37% of these children also had problems with executive function. This category was found to have the most co-morbid non-verbal learning disorders.

Parental consent was given to perform MRI scans on 39 of the participants and 15 of children were reported as having abnormal scans. These abnormalities were found to be heterogeneous, thus no specific region of the brain was consistently involved. The participants in the ideomotor dyspraxia group had normal MRI scans. Despite the variations in aetiology, Vaivre-Douret et al. (2011) proposed that motor planning and programming were the core problems for children with DCD, as opposed to problems with motor execution, inter-hemisphere motor-control or visual perceptual problems. This proposal supports the theory of DCD being caused by a deficit in internal modelling.

It is clear from the research reviewed that DCD is heterogeneous condition, the aetiology of which is varied. It is possible that the myriad of problems that have been demonstrated contribute to a deficit of internal modelling which may be a core feature of this condition.

Developmental Coordination Disorder, Executive function and Cognition

It has also been argued that problems with executive function are typical in people with DCD (Tal-Saban et al. 2014) and that neurodevelopmental deficits in one aspect

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of functioning (e.g., motor) can impact other areas of function (Leonard & Hill, 2014). Executive function can be seen as an umbrella term for the set of complex cognitive processes which underlie goal-directed behaviour that are orchestrated by the prefrontal cortex (Best & Miller, 2010). The ability to plan, initiate tasks, organise materials and information, manage time effectively, persist to goal completion and to self-appraise, are fundamental to goal achievement (Dawson & Guare, 2010). The executive skills that enable these processes include attentional control, response inhibition, working memory, metacognition and cognitive flexibility (Anderson et al., 2001).

A review of the literature in relation to the impact of DCD on executive function, demonstrated a scarcity of research in this area. Many of the studies did not control for comorbidity, making it difficult to ascertain which findings related directly to DCD and which were related to the comorbid condition. For this reason, studies pertaining to DCD with comorbidity were excluded from this review. Studies involving the adolescent population were also excluded at this juncture, as this research was reviewed in conjunction with the literature pertaining to adolescence with DCD which appears later in this chapter.

Many of the studies in this area demonstrated that people with DCD have deficits in working memory (Wilson et al., 2013; Leonard et al., 2015; Sumner et al., 2016). There was also evidence of deficits in inhibitory control (Mandich et al., 2002; Wilson et al., 2013; Leonard et al., 2015) and attention (Wilson et al., 2013). Additional cognitive problems found in this population included deficits in visuospatial processing and verbal memory (Chen et al., 2013; Leonard et al., 2015). The results of all of these studies need to be interpreted with caution, however, as non-probability samples were used and sample sizes were relatively small.

Sumner et al. (2016) demonstrated that a convenience sample of 56 children with DCD with a heterogeneous intelligence profile had deficits in working memory and processing speed when compared to 56 matched typically developing peers. However the results regarding processing speed were confounded by the test

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involving fine motor skills. Leonard et al. (2015) also demonstrated the link between DCD and deficits in working memory in a study involving a convenience sample of 27 children with DCD and a matched control sample of 24 typically developing children. In addition, the results also indicated that children with DCD had deficits in inhibition but not in task switching, along with deficits in the area of visuospatial processing. Scores at or below the 16th percentile on tests of motor proficiency were used to assign participants into the DCD group and thus these results need to be interpreted with caution.

Further evidence of problems in the area of inhibition can be found in a study conducted by Mandich et al. (2002) who compared a convenience sample of 20 children with DCD with a matched group of 20 typically developing peers. They found the time taken to inhibit a response was equivalent between the two groups but the DCD group made significantly more errors in the process. The cut-off point in this study for a diagnosis of DCD on a test of motor proficiency was at the 15th percentile. The link between DCD and deficits in working memory and inhibitory control can also be found in the results of a meta-analysis of the literature comparing typically developing children to those with DCD published between January 1997 and August 2011 (Wilson et al., 2013). There was also evidence of deficits in attention and the authors proposed that generalised executive dysfunction is a common feature of DCD. They reported that the degree of this dysfunction was greater than that found in children with ADHD and noted that that the problems were particularly apparent in dual-task performance with a motor load.

Chen et al., 2013 hypothesised that children with DCD may have more general difficulties with memory and that the majority of the research regarding the impact of DCD on memory has been conducted in laboratory rather than 'real world' conditions and has focused on working memory. They tested this hypothesis in a quasi-experiment involving a convenience sample of 19 children with DCD and 19 typically developing children who were matched regarding age, gender and non-verbal IQ scores. They found that the children with DCD scored significantly lower

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than the control group on verbal and visual memory scores, marginally lower scores on spatial memory and higher on prospective memory. However, these results need to be interpreted with caution as they used a cut-off point of the 15th percentile on MABC-2 (Henderson et al., 2007).

The possibility of a link between DCD and deficits in executive function, visuospatial processing and memory is a comparatively new area of investigation. Further research is required to establish the extent and nature of these issues and the 'real world' implications of them for people with DCD.

Developmental Coordination Disorder and Comorbidity

Research regarding the aetiology and consequences of having DCD needs to be interpreted in light of the relatively high incidence of comorbidity. DCD has been shown to co-occur with conditions such as ADHD, Specific Language Impairment, and with Specific Learning Disabilities such as Dyscalculia, Dysgraphia and Dyslexia (Blank et al., 2012). It has also been acknowledged that DCD can co-occur with Autistic Spectrum Disorders (ASD) (American Psychiatric Association, 2013).

Problems with motor function have long been documented in people with ASD (Foulder-Hughes & Prior, 2014) but it is now recognised that having poor motor function is not an inevitable consequence of this condition. ASD and DCD are, therefore, seen to be separate but co-morbid conditions (Siaperas et al., 2012; MacNeil & Mostofsky 2012). Further research is required to establish the rate of co-morbidity between these conditions.

There is also evidence of a high rate of co-occurrence with DCD and ADHD. Rasmussen and Gillberg (2000) conducted a longitudinal study of 61 people with ADHD at aged 22 and found that 39 of them had also been diagnosed with DCD before the age of seven. The participants were compared with age-matched, typically developing peers and it was found that the cohort with both ADHD and DCD had a wider range of difficulties than that of the other cohorts in the study.

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This group demonstrated poorer educational levels and a higher rate of reading disorders, personality disorders and alcohol abuse. They concluded that childhood ADHD and DCD appeared to be a most important predictor of poor psychosocial functioning in early adulthood. Kadesjo and Gillberg (2001) carried out a study involving 57 children with ADHD and found that 47% of them also had DCD. However, as diagnosis for DCD was made by PE teachers using portions of the Folke Bernadotte Test (Bille et al., 1985) the findings can't be taken as definitive evidence of the condition being present. These preliminary findings suggest that children diagnosed with ADHD should be screened for DCD.

DCD has also been found to co-occur with Specific Language Impairments. Gaines and Missiuna (2007) found that 66% of the 40 children with Specific Language Impairment in their study also had DCD. Flapper and Schoemaker (2013) found that the co-occurrence was at a rate of 32.3% in their sample of the 65 children with Specific Language Impairment. They also found that children with both conditions were more impacted with regard to their autonomy and social functioning than the children with Specific Language Impairments alone.

Specific Learning Disabilities such as Dyscalculia, Dysgraphia and Dyslexia have also been found to be comorbid with DCD. Although there is reference in the literature to the co-occurrence of Dyscalculia and DCD (Zoia & Skabar, 2008; Lemonnier, 2010), a review of the literature only revealed one study in which this link was actually demonstrated. Pieters et al. (2012) compared 43 nine-year old children with DCD with the same number of matched controls and found significant differences in their mathematical ability. Severe number fact retrieval problems were found in 56% of the total sample of children with DCD and severe problems for procedural calculation were found in 65% of the children with DCD. The sample was purposive rather than random, thus the results can't be generalised. It was also unclear whether the children concerned had co-existing learning disabilities or visual perceptual problems which could also account for the dyscalculia. There is also some evidence for the co-occurrence of Dyslexia and DCD (Green & Baird,

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2005; Cheng et al., 2011) but further research is required to establish the true incidence of comorbidity in relation to both of these Specific Learning Disabilities.

There is, however, ample evidence for the co-existence of Dysgraphia with DCD (Tal-Saban et al., 2012). Magalhaes et al. (2011) carried out a systematic review of peer-reviewed publications from January 1995 to July 2008 in order to summarize and describe the activity limitations and participation restrictions of children with (DCD) and found that poor handwriting was one of the most frequently cited issues.

Conclusion

DCD has been demonstrated to be a heterogeneous motor impairment, with mixed aetiology and some evidence of subtyping. Arguably, a deficit in internal modelling is a core factor of this condition and it is clear that people with DCD have problems with motor planning and programming. There is also evidence of problems with executive function, with research in this area predominantly indicating problems with working memory. DCD has been shown to have co-morbidity with ASD, ADHD, Specific Language Impairment, Dyscalculia, Dysgraphia and Dyslexia and there are indications that people with these conditions should be routinely screened for DCD.

2.3 Adolescence

Introduction

As the overall aim of this research is to discover the meaning of transitioning into secondary school as it appears to adolescents with DCD, it was important to understand not just the nature of DCD, but also the nature of adolescence. The aim of this section is to provide a summary of relevant literature pertaining to this stage of development.

Adolescence and puberty can be differentiated in that puberty is initiated by the interaction of the hypothalamus, pituitary gland and gonads culminating in gonadal maturation, whereas, adolescence refers to the development of adult behaviours (Paus, 2013). Structural changes precipitated by the organising impact of hormones include changes in body height, fat distribution and the development of secondary sex characteristics (Susman et al., 2010). The young person needs to adapt to these changes and this will involve them learning new skills such as shaving and managing menstruation along with establishing new habits e.g. increased washing due to increased perspiration. These tasks may pose additional challenges for the adolescent with DCD.

Adolescence is a period in which the person masters tasks such as becoming more autonomous from parents; forming romantic partnerships; deepening friendships with peers and becoming increasingly more independent in decision making and in everyday tasks (Scherf et al., 2013). This phase of development has also been shown to be a time in which people are more likely to engage in high risk behaviours (Anderson, 2015). Adolescence is characterised by greater self-consciousness with a heightened sensitivity to social acceptance along with an increased orientation away from parents towards peers (Schriber & Guyer, 2016). This burgeoning self-consciousness and desire for social acceptance may lead to the adolescent with DCD becoming more aware of their differences and less willing to avail of any accommodations that might make them appear different to their peers.

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They may also be hindered in their quest for independence if they still need help with everyday tasks.

Psychological Aspects of Adolescence

The academic discipline of adolescent psychology originated in the twentieth century with Granville Stanley Hall (1844-1924) who is purported to be the father of this field of study (Berzonsky, 2000). Stanley Hall described adolescence as a period of 'storm and stress' in which there was a decrease in self-control (storm) together with an increase in sensitivity to stimuli (stress) and this became a dominant discourse (Hollenstein & Loughheed, 2013). This view began to be challenged in the 1960s and 1970s when results of empirical studies showed that this experience of adolescence was not ubiquitous and that the majority of young people sustained good relationships with their parents and coped adequately with the challenges of adolescence (Coleman, 2011). Erik Erikson (1902 – 1995) moved away from the 'storm and stress' perspective and placed a greater emphasis on the influence of the young person's social environment on their experience of adolescence. Erikson postulated that humans developed through a series of eight life span stages in which the task of adolescence was to integrate past experiences in order to form a stable sense of personal identity (Berzonsky, 2000). He described late adolescence as a period in which the person is unsure of their identity and is working towards defining themselves and stipulated that this process of personal redefinition was aided by a combination of internal psychological processes combined with the cultural influences (Bronson, 1959). Marcia (1966) further developed Erikson's theories of adolescence by postulating that there were four possible identity statuses. He argued that the task of the adolescent was to evaluate the goals, ideologies and expectations of their family and / or culture of origin in order to facilitate a process of self-determination and individuation. His identity statuses were as follows:

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1. Identity achievement: This is the adolescent who has experienced a crisis period in which they re-evaluated past beliefs and achieved a resolution so that they are now committed to a set of goals, ideologies and life choices that are their own.
2. Identity-diffusion: The adolescent may not have experienced a crisis period and there is are no clear life goals and values tend to change readily.
3. Identity moratorium: The adolescent is in the crisis period and has not as yet formed stable personal commitments.
4. Foreclosure identity: The adolescent has not experienced a crisis and tends to adopt the goals and values of their parents and significant others.

(Marcia, 1966)

Erikson and Marcia contributed to the field of psychology in the area of adolescence in that they proposed that adolescence was a period in which a person evaluated the ideologies and beliefs typical of their social environments in order to form clear goals, values and life choices for themselves. They proposed that this was achieved through a process of exploration and experimentation with identity alternatives until a stable identity was established (Luyckx et al., 2014). Their work precipitated further research into identity formation and was a building block for future research into the importance of personal autonomy in adolescence (Coleman, 2011).

Personal autonomy can be conceptualised in two ways i.e. as independence which entails not relying on others when choosing how to behave or when making decisions, or as self-endorsed functioning, in which the person acts upon personally valued interests, preferences, and needs and may do this in relation to others and not necessarily independent of them (Van Petegem et al., 2012). The concept of 'relatedness' may be particularly useful when considering adolescents with DCD, as 'relatedness' allows for autonomy whilst remaining connected to others and whilst both giving and receiving support when needed (Inguglia et al., 2015). The adolescent with DCD may develop personal autonomy whilst still accepting help

from others as long as such assistance is seen as appropriate, valuable and under their direction.

Adolescence and Neurological Changes

The aforementioned changes that occur in adolescence co-occur with significant neurological changes. It remains a matter for debate as to whether there is a causative relationship between these neurological changes and the behavioural, affective and cognitive changes that the young person experiences at this time (Schriber & Guyer, 2016). Research using brain imaging demonstrates that during adolescence the brain undergoes a process whereby there is an elimination of unnecessary neural connections (synaptic pruning). This is particularly evident in the prefrontal cortex where it has also been demonstrated that there is an increase in connectivity between this and other areas of the brain (Coleman, 2011). The development of executive function is thought to rely strongly on the prefrontal cortex (Huizinga et al., 2006). The overall structural and functional maturation of the prefrontal cortex is slow and can take up to the age of 30 to be complete (Blakemore & Choudhury, 2006). It has been demonstrated, however, that age-dependent spurts of development in executive function occur and continue progressively until they plateau in early adulthood (De Luca et al., 2003) with different subcomponents of executive function developing at different times (Huizinga et al., 2006). Attentional control typically shows a spurt in development between the ages of 8 and 9, with performance to adult level occurring between the ages of 11 and 12, and further maturation till age 15 (Schiebener et al., 2015). Cognitive flexibility has been shown to improve substantially at 12 years of age and to reach adult level by 15 years of age, with working memory being found to reach an adult level of performance by the age of 12 (Huizinga et al., 2006). Anderson et al. (2001) found some evidence of a significant increase in goal-setting skills around age 12. Though the studies previously referred to related to the neurological development of the typically developing adolescent, a review of the literature demonstrated that the majority of research published in this area relates to

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adolescents with disorders such as ADHD or conduct disorders along with adolescence who misuse drugs and alcohol. There remains a need for further research in the area of executive functioning in the typically developing adolescent.

It has also been argued that the synaptic pruning, extensive myelination, volumetric changes, and rebalancing of excitatory and inhibitory inputs that happen in adolescence may render the adolescent brain particularly socially sensitive (Schriber & Guyer, 2016). Social cognition refers to the ability to understand the social world and is comprised of both basic and complex processes. Basic perceptual processes include the ability to share attention with another person regarding an object or event of interest, recognise faces and detect biological motion whereas complex processes include the ability to read emotion from a person's non-verbal cues, understand what they might be feeling and negotiate complex interpersonal decisions (Blakemore & Mills, 2014). Blakemore and Mills (2014) found evidence that the complex processes continued to develop into adolescence along with the more complex dimensions of face processing such as the reading of emotion. They also found evidence that the adolescent was particularly attuned to processing cues regarding how they were being evaluated by their peers and that peer conformity was a prominent feature of this stage of development. A longitudinal neuroimaging study which involved collecting 857 brain scans from 288 participants aged between 7 and 30 was conducted in order to explore of human brain maturation of the areas involved in social cognition (Mills et al., 2014). Findings indicated that the structural development of social brain network peaks in early or pre-adolescence but continues to develop throughout adolescence until it stabilises in the early twenties.

The limbic system which is responsible, among other things, for the processing of information concerning emotions has been shown to undergo a period of change in adolescence (Coleman, 2011). The amygdala forms part of this system and is a component of the neural circuitry which is central for emotion and has also been demonstrated to have an important role in emotional learning (Gallagher & Chiba, 1996). Scherf et al. (2013) argue that research consistently demonstrates that

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amygdala volumes increase significantly in early adulthood. They conducted a review of the literature to determine the functional impact of these changes and found evidence for measurable changes in the response of the amygdala to facial expressions and to the magnitude of emotional response to non-face positively valenced (intrinsically attractive) images. Varlinskaya et al. (2013) also argue that changes in the limbic system may account for the increased motivation to experience new things and to take risks which have been shown to peak at 12–15 years. There are also increases in the volume and location of neurotransmitters, most notably dopamine, which shifts from limbic to cortical innervations which has also been linked with risk-taking and novelty seeking behaviour (Spear, 2000). Casey et al. (2011) argued that in emotionally charged situations, the more mature limbic system may dominate the prefrontal control system in guiding actions which may prevent rational decision making at these times. Changes in the limbic system have also been associated with the adolescent being more easily affected by stress (Coleman, 2011) and this has been linked to the heightened prevalence of emotional disorders during adolescent years (Pattwell et al., 2013).

There is a sparsity of research regarding prospective memory across adolescents (Wang et al., 2011). It is generally accepted that there is a rise and fall in performance in this area, with development still occurring in childhood and adolescence, maturity and stability in performance during early adulthood, and deterioration during old age (Zollig et al., 2007). A prospective memory task consists of two distinct components: the prospective component which is concerned with remembering that ‘something’ has to be done and the retrospective component which refers to remembering ‘what’ has to be done (Zimmermann & Meier, 2006). There is evidence that the processes underlying the retrospective element of prospective memory are not fully developed in adolescence (Zollig et al., 2007). This may account for the findings of the study conducted by Wang et al. (2011) who found significant differences in performance in prospective memory tasks, with adolescents performing less well than young adults. Once the ‘what’ element of the task was prompted using a visual cue the adults and adolescents performed equally well.

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It is clear that there are significant neurological and physical changes occurring during adolescence but it would be overly simplistic to assume that these changes promote similar cognitive, behavioural or affective changes in the individual. Relational developmental systems theory offers a more contemporary view of adolescence whereby development is considered plastic and adaptive development results from mutually beneficial and reinforcing exchanges between an individual and his or her environment that unfold over time (Overton, 2013). In this way Overton presents an optimistic view of human development in that changes in the person's context can capitalise on plasticity of human development and promote positive developmental trajectories.

Conclusion

In conclusion, adolescence can be conceptualised as the period between the onset of puberty and the achievement of relative independence or autonomy. The beginning of adolescence is often defined biologically and the end of adolescence socially (Blakemore & Mills 2014). It is clear that adolescence is a time when structural changes occur in the brain and body, but how the adolescent experiences these changes varies according to context and to individual differences. A central task of adolescence is to become an autonomous adult but autonomy does not have to infer independence from others but may rather incorporate a more interdependent relationship.

2.4 Adolescence / Early Adulthood and Developmental Coordination Disorder

Introduction

The previous section of this literature review focused on the physical and psychological changes inherent in adolescence. This section presents a review of literature regarding adolescents and young adults with DCD. When conducting the literature search it became apparent that research relating to DCD and this age-group is limited, with the majority of research being conducted with children under twelve. There was, however, evidence that DCD persists throughout adolescence and adulthood and that having this condition may have an impact on fitness and health. Adolescents and adults with DCD continued to have difficulties with some activities of daily living and had problems mastering new skills such as driving. There was also evidence that DCD impacts executive function but the findings as to whether having DCD impacts self-esteem were mixed.

DCD and Persistence through Adolescence

Visser (2003) argued that there is a lack of knowledge about the prognosis of DCD and that some children seemed to outgrow their motor problems. This long-held perspective may have been influenced by the fact that fine motor control, bimanual coordination and visuomotor skills are not fully developed until adolescence (Diamond, 2000). The Leeds consensus statement (Economic and Social Research Council, 2006) recommends that the cut off point for a diagnosis of DCD in relation to general motor competence be at the 5th percentile though it acknowledges that the 15th percentile is often used when conducting research on this population. However the European Academy for Childhood Disability (Blank et al., 2012) proposed that the 15th percentile should be used as the cut-off point. Arguably, this debate causes confusion when studying whether DCD persists, as a child diagnosed at the 15th percentile is merely just below the 'low average' range and according to the Leeds consensus statement (Economic and Social Research Council 2006) should not have been diagnosed with the condition to begin with.

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One of the larger bodies of research investigating the persistence of DCD in adolescents was a longitudinal cohort study in which the motor skills of participants were measured at ages 5, 11, 15 and between the ages of 17 and 18 (Lyytinen & Ahonen, 1989; Ahonen, 1990; Cantell et al., 1994; Cantell et al., 2003). The researchers also studied the impact of delays in motor skills on educational performance, self-image and leisure activities. The majority of the study was completed prior to DSM IV (American Psychiatric Association, 2000) and the terms 'clumsy', 'motor impaired' and 'DCD' were used interchangeably up to that point. The original study (Lyytinen & Ahonen, 1989; Ahonen, 1990) involved the complete population of five-year-old children attending schools in a town in Finland (n=1,138). The children were screened regarding their motor development and 115 were found to have motor delays. Nine of these children were excluded from the initial sample as they had IQ scores at or below the borderline range and a further three were excluded on the basis of their motor delay being caused by cerebral palsy. The sample would appear to meet criterion D of the current DSM V diagnostic criteria for DCD:

D. The motor skills deficits cannot be better explained by intellectual disability (intellectual developmental disorder) or visual impairment and are not attributable to a neurologic condition affecting movement (e.g., cerebral palsy, muscular dystrophy, degenerative disorder), (American Psychiatric Association, 2013).

However, a limitation of this study is that it was unclear whether any of the participants who were placed in the 'DCD' group, at any point in the study, would have met criteria A – C of the DSM-V (American Psychiatric Association, 2013). There was no indication that any of the participants had received a formal diagnosis of DCD or whether they would score at or below the 5th percentile on an individually-administered and culturally appropriate norm-referenced test of general motor competence. Participants were compared with age-matched peers throughout the study and results indicated that 53 of the group who had been found to have motor delays at age 5 continued to have those delays at age 11

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(Ahonen, 1990). When the participants were reassessed at age 15 only 46% of the group with motor delay at age 11 still had delayed motor skills (Cantell et al., 1994). The latter study also indicated that there were no significant differences in performance between the DCD group and the typically developing group in the study of languages (native and foreign) or maths but that the 'DCD' group scored significantly worse in music, drawing and PE (minimum $p < .05$). The 'DCD' group also had fewer hobbies than that of the other group and this included hobbies of a physical and non-physical nature. It was interesting to note that the adolescents in the 'DCD' group had a realistic view of their competencies in the area of athletics but that this did not negatively impact their global self-worth or their perception of their physical appearance.

When the participants were aged between 17 and 18 they were invited to participate in a further follow-up study (Cantell et al., 2003). Results demonstrated that the motor problems in the 'DCD' group persisted as did the differences in self-perception and in leisure activities. They also reported that the participants in the 'DCD' group were functioning at a developmentally younger age than the participants in the other groups but they did not clarify whether this group had any other comorbid conditions that might also explain these differences e.g. a Pervasive Developmental Delay. Collectively, these studies offer some evidence of the persistence of DCD throughout adolescence and early adulthood but it was not possible to determine if children with DCD, whose motor skills are at or below the 5th percentile, continue to meet the DSM-V (American Psychiatric Association, 2013) diagnostic criteria for DCD throughout adolescence and young adulthood.

Knuckey and Gubbay (1983) conducted a retrospective study and found that participants who had 'severe' motor impairment as children still demonstrated this level of impairment when aged between 16 and 20, whilst those in the mild to moderate range were functioning at an equivalent level to their typically developing peers. Participants in this study would have met criteria B and D of the DSM-V (American Psychiatric Association, 2013) diagnostic criteria for DCD but norm-referenced tests were not used and thus it was not possible to discern what was

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meant by a 'severe' motor impairment in terms of a percentile score. Losse et al. (1991) conducted a longitudinal study and found that motor impairments persisted into adolescence, but as this study was also conducted before the publication of the DSM IV (American Psychiatric Association, 2000), it was unclear whether the participants actually had DCD. The external validity of the study was also compromised as, in the absence of a viable alternative, 'The Test of Motor Impairment' (Stott et al. 1984) which was norm-referenced up to the age of 11 was used for the adolescent participants who were aged between 15 and 17.

There is evidence that DCD persists through to adolescence and adulthood. Further longitudinal or retrospective studies are required in order to obtain statistics as to the prognosis of this condition. These study should involve participants who were formally diagnosed with DCD and whose overall motor ability lies at or below the 5th percentile on an individualised, norm-referenced and culturally sensitive test of motor proficiency.

The Nature of Impairment in Adolescents / Adults with DCD

A review of the literature demonstrated that many of the published studies in this area pertain to the cognitive processes affected in adolescents or adults with DCD. Tal Saban et al. (2014) reported the same level of problems in executive function irrespective of whether participants had a diagnosis of DCD or borderline DCD, with deficits in working memory, attention, emotional control, task initiation, planning, organisation and self-monitoring. The problems in these area were significantly worse than those of a matched sample of adults with typical motor proficiency. Some of the findings were at variance with the studies appraised earlier in this literature review (Mandich et al., 2002; Wilson et al., 2013; Leonard et al., 2015), as the participants with either level of DCD did not demonstrate deficits in inhibitory control. It should be noted that Tal Saban et al. (2014) used a self-administered questionnaire, the 'Behaviour Rating Inventory of Executive Function – Adult Version' (Roth et al., 2005), to measure executive function. The findings therefore,

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whilst giving a 'real world' perspective, relate to the participants' perception of their ability in this area and may not represent their actual ability in the area of executive function.

In contrast to previous study, Rigoli et al. (2012) demonstrate a significant positive association with the speed of inhibition control and scores on the MABC-2 (Henderson et al., 2007) in adolescents (mean age 14.2 years, standard deviation 1.1 years). They also found positive associations with visuospatial working memory but not with verbal working memory. There was an association between deficits in balance and the total errors made in inhibition and switching. The authors argued that this was caused by participants with balance problems having to compensate with increased attention during tasks high in postural demand. A random sample was used when recruiting participants, however, the findings need to be interpreted with caution as the overall sample size was small (n=93), with only five of the participants scoring below the 5th percentile on the MABC-2 (Henderson et al., 2007) and two scoring between the 6th and 15th centiles. The remaining participants scored at or above the average range.

Both Tal Saban et al. (2014) and Rigoli et al. (2012) proposed that their studies supported Diamond's (2000) hypothesis that there is a link between cerebellar function and executive function. Diamond proposed that motor development and cognitive development are closely related on the basis that functional neuroimaging studies demonstrate that when a cognitive task increases activation in the dorsolateral prefrontal cortex, there is also increased activation in the contralateral cerebellum. She conducted a review of the literature in this area and found that cognitive tasks that have been shown to increase activation in both areas include tasks involving working memory, verbal fluency, learning and memorising random unrelated information, switching attention from one task to another and in tasks involving source memory. More research is required in this area as, despite the fact that similarities in the mechanisms underlying deficits in both cognitive operations and the function of the cerebellum have been

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acknowledged, the exact nature of the operations performed by the cerebellum itself remains unknown (Manto et. al, 2012).

Cousins and Smyth (2003) demonstrated that adult participants with DCD had significantly slower movement times than those without motor impairment, but had equivalent reaction times on simple tasks (push a button in response to an auditory cue). They observed that the adults in the DCD group used unusual movement strategies during testing which they suggested were performed to compensate for problems with balance. They also found tasks involving manual dexterity and hand-eye coordination for table top activities were less affected than tasks involving gross motor movement. Tasks that necessitated ball skills were particularly challenging for the DCD group. The findings can't be generalised to the wider population of adults with DCD as the study used a non-probability sample and the sample size was small. The findings are limited further by the fact that only 8 of the 19 adults in the DCD group had a formal diagnosis of the condition.

The impact of DCD on Self-Care, Productivity and Leisure

Whilst there is evidence to indicate deficits in the cognitive processes involved in executive function in adolescents and young adults with DCD, it is important to ascertain what impact this dysfunction has on everyday living. Kirby et al. (2008) conducted a descriptive study which surveyed 98 people in higher education (aged 16–25 years) and found that 52% of participants with DCD reported problems relating to executive dysfunction e.g. problems with organising their materials, with timekeeping and with organising and integrating information. In a later study, Kirby et al. (2011) found that 53% of the 19 participants surveyed with DCD (aged 17-25) reported problems with managing money, planning, and both organising and finding their belongings. A parent of each young adult also participated in the study and 68% of them reported that their son or daughter had weak organisational skills and poor time management.

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Young people with DCD have also been found to experience difficulties in activities that involve learning new skills such as driving. De Oliveira and Wanna (2012) found that a sample of young adults (mean age 17.4, standard deviation 1.7) with DCD needed to adjust their steering wheel to a significantly greater extent than those without the condition. They also demonstrated a significantly larger variance in heading when negotiating the bends but not when driving on straight roads. The DCD group were able to detect the virtually crossing pedestrians at the same speed as the other participants but did not react to them as quickly. The average speed for the DCD group matched that of the other two groups and as a result this group may have more difficulty negotiating bends or reacting safely to hazards. Although the findings of this study have implications regarding road safety for people with DCD, they should be seen as preliminary in nature as the sample was a small (n=26) non-probability one, with only eight participants in the DCD group.

Further evidence that people with DCD have difficulties learning to drive can be found in research involving qualitative and survey methods (Missiuna et al., 2008; Kirby et al., 2011;). Kirby et al. (2011) found that 47% of the 19 young adults with DCD in their study reported difficulties with parking a car and all participants reported that they took longer to learn to drive than their peers. All ten participants with DCD in the study conducted by Missiuna et al. (2008) reported difficulties learning to drive and that once they had learned, they found it took them significantly longer than their peers to learn how to parallel park and to drive in reverse. Other activities of daily living that were reported as problematic for adolescents and young adults with DCD included: problems with the speed and legibility of writing (Kirby et al., 2008; Lingam et al., 2013); problems taking notes during class (Kirby et al. 2011; Tal Saban et al. 2012); problems learning new manual skills needed in some employments (Missiuna et al., 2008); and problems with participating in sports and PE (Lingam et al., 2013).

It has been argued that having DCD has an impact on the development of social skills and on socialising (Cantell et al., 2003). This may occur due to the difficulties children with DCD can have in playing ball sports or in participating in play that

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involves a large degree of motor skills or motor planning e.g.in games such as tag. Arguably, participation in these types of activities decreases when children reach adolescence. It was interesting to note that the young adults in the study conducted by Kirby et al. (2008) perceived social skills to be an area of strength for them. However, Kirby et al. (2011) found that 20% of the parents in their study reported that their adult children with DCD had difficulties socially. These problems related to rejection by peer groups and difficulties with interpreting social cues, body language and expression. It is important to note that 9 of the 19 participants in this study had additional diagnoses such as ADHD or Asperger's Syndrome, thus it is possible that the four participants with these problems were on the Autistic Spectrum and that the problems related to this and not to their having DCD. The researchers found that the majority of participants avoided team games and going to night clubs and they conjectured that this could cause social isolation. The participants themselves did not describe these issues as problematic, thus they may merely indicate social preferences and it is possible that their social needs were being met in other ways.

It is possible that peer relations become easier for adolescents and young adults with DCD as they have more autonomy regarding activity choice and thus are in a position to choose leisure pursuits that suit their profile of strengths and challenges. Missiuna et al. (2008) provide some evidence for this in their phenomenological study involving nine university students with DCD. They found that participants perceived their coordination problems as less problematic to them during adolescence than they had been in childhood. They reported that they could now choose to opt out of things they underperformed at and that they had greater peer acceptance because their peers were more interested in who they were as a person rather than how they performed in areas such as sport.

The Health Implications of having DCD

The increased autonomy regarding activity choice could lead to the avoidance of not only team sports, but exercise in general, which may have long term health implications for people with DCD. It has been demonstrated that participating in

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exercise can reduce a person's levels of anxiety and depression (De Moor et al., 2006), thus an avoidance of exercise may have long term implications on the ability of people with DCD to handle stressful or difficult life events. A more sedentary lifestyle may also lead to a higher propensity to gain weight which can increase the problems experienced by people with DCD with postural control, mobility and balance (Wagner et al., 2011).

Chirico et al. (2012) found that a convenience sample of 33 adolescents with probable DCD demonstrated an elevated cardiac output when compared to 53 typically developing peers. This study is particularly significant as data was collected over three consecutive years and the findings remained consistent throughout that period. It was also troubling to note that the adolescents in the probable DCD group were three times more likely as those without DCD to be overweight throughout the study period, which commenced when they were aged 12. The elevated cardiac output was significantly associated with higher fat mass in the probable DCD group and the researchers found that these factors combined resulted in the left ventricle mass being higher. The authors hypothesized that people with DCD may be at risk of developing elevated left ventricle hypertrophy in the future and this warrants further investigation.

Coverdale et al. (2012) demonstrated that baroreflex sensitivity was lower in the probable DCD group of the same cohort of participants as in the latter study. This finding was also attributed to higher percentage of body fat in those in this group. They found that participants who scored at or below the 5th percentile on the MABC-2 (Henderson et al., 2007) were lowest in baroreflex sensitivity. This could lead to future cardiovascular problems as the primary purpose of the arterial baroreflex is to keep blood pressure close to a particular set point over a relatively short period of time (Head, 1995). Clearly, it is important to ascertain if these findings would be replicated in a randomised controlled experiment which includes a power calculation to ensure an adequate sample size.

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Barnett et al. (2012) conducted semi-structured interviews with eight teenagers with DCD (aged 13–15) and their parents. Seven of the parents reported that their child did very little physical activity, with the remaining parent needing to provide considerable support to enable their child to keep active. The researchers explored the reasons for this lack of activity and found that all of the parents reported that their child's poor motor coordination and lack of confidence in motor abilities were factors in this avoidance. Other internal barriers to participation included the adolescent having poor motivation and perceiving that there was a lack of time to exercise, along with reported fatigue and pain on exercising. Experiences of negative comments regarding their coordination problems from peers and teachers also impacted their willingness to join exercise-based activities, along with the availability of parents to support and encourage them to participate. It should also be acknowledged that there were also external barriers including a lack of local sporting facilities and difficulties with transportation. This was a small-scale study, the qualitative research approach was unclear and the philosophical underpinning to the study was not stated. However the data analysis process was clearly outlined and the categories that emerged were checked with an expert in the area. Barriers to exercise in this population warrant further investigation and there is a need for research into the methods of removing these barriers where possible. Arguably, an action based research approach would be best suited in this area as it culminates with the step of taking informed action (Taylor et al., 2006) which can then be further assessed in terms of viability.

DCD, Adolescence and Self-esteem

Given the range of difficulties experienced by young people with DCD, it is unsurprising that it has been argued that adolescents with DCD have a lower self-esteem / self-worth than their typically developing peers (Skinner & Piek, 2001). Piek et al. (2006) found that poor fine motor proficiency was associated with lower perceived scholastic ability and hypothesised that this may have been as a result of difficulties with handwriting. They also found that the adolescents with DCD (Mean age 13.8, standard deviation 1.12 years) had a poorer perception of their scholastic ability than the children with DCD (Mean age 9.1, standard deviation 0.81 years).

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They conjectured that this difference may have been caused by the adolescents being more aware of their differences. Understandably, they found that gross motor proficiency impacted perceived athletic competence. Perceived athletic competence, but not scholastic abilities, were found to impact self-worth in the males with and without DCD. However, the females in the study, regardless of whether they had DCD or not, perceived both scholastic and athletic competence as a determinant to self-worth. These findings indicate that females with DCD may have an increased vulnerability to developing low self-esteem. These findings are notable as the sample, though a convenience one, was relatively large (n=265) and they used a battery of norm-referenced tests along with an age-matched control group.

Viholainen et al. (2014) found an association between self-concept in PE and psychosocial well-being in a cohort of typically developing adolescent females (n=327). They found that females who had good motor skills and perceived themselves to do well in PE classes had better peer relations and fewer emotional problems than those who did not. They also found that the impact of having poor motor skills on peer relations was lessened when a participant perceived themselves to have strengths academically. These findings together with those of Piek et al. (2004) indicate that consideration should be given to screening females with DCD for problems with self-esteem so that they can be supported where appropriate.

Poor self-esteem is however not an inevitable outcome of having DCD. Missiuna et al.'s phenomenological study (2008) highlights that reactions to having DCD can be context specific. Participants reported an increased self-acceptance and self-confidence in the adolescent years as they were now able to focus on what they were good at, thus they were no longer in a position of experiencing failure on a regular basis. Participants also became adept at finding alternative methods of doing tasks and at using humour to cope with their difficulties. It should be noted, however, that the participants in this study were in third-level education and thus had experienced some academic success which according to Viholainen et al. (2014) may have lessened the impact of having DCD on self-esteem.

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Lingam et al. (2013) also found that context impacted self-acceptance and self-esteem for adolescents with DCD. They conducted an interpretive phenomenological study in which they interviewed eleven young people aged 11–16 years with DCD. They found that friendships were highly valued by participants and their self-perception was strongly influenced by their perception of being accepted by their peers and by having a social group in which they were comfortable. Participants also expressed the importance of teachers understanding them, though they did not necessarily need them to accommodate for their needs. In accord with the findings of Missiuna et al (2008) the older participants found having DCD less of a problem than the younger participants, with participants reporting that they found it helpful to be able to choose subjects and activities to match their skill set. The majority of the participants emphasized what they could do rather than what they couldn't and all enjoyed a wide variety of activities along with socialising with friends.

Conclusion

There is evidence that people do not 'grow out' DCD and that adolescents and young adults with DCD continue to have problems learning new motor tasks including learning to drive. There is also evidence that the difficulties with executive function persist along with problems with handwriting and sports activities. There are indications that the negative impact this disorder has on activities of daily living and on socialising is lessened in the adolescent years as young people have more autonomy over the choice of the leisure and academic pursuits they engage in. This autonomy may lead to an avoidance of sport and exercise which can have a negative impact on body mass and cardiovascular health. It may also impact the ability of adolescents to cope with anxiety and difficult life events. The impact of having DCD on self-esteem is influenced by both the individual's temperament, life experiences and context but this has been shown to be an area of particular concern in the female population.

2.5 Transitions

Introduction

The previous sections of the literature review have focused on different aspects of the 'person' i.e. the nature of DCD, development in adolescence and the adolescent with DCD. This section will focus on the different theoretical approaches to transition and their application to the transition from primary to secondary school. There will also be an introduction to the Irish Education System to provide a context for the transition. There is a limited range of theories regarding transitions and no single comprehensive theory of transitioning that would afford an overall understanding of the myriad of issues involved (Joly, 2016). It is, therefore, important to consider a range of theoretical approaches in order to understand the meaning of transitioning and the following theories were selected as being particularly pertinent when considering the transition from primary to secondary school: Meleis' Transition Theory (Chick & Meleis, 1986); Bridges's (1986) theory of the stages of transition; Bronfenbrenner and Morris's (1998) Bioecological Model of development; and Bandura's (1977) theories regarding self-efficacy.

Meleis's Transition Theory (Chick & Meleis, 1986) depicts a transition as a process in which a person moves from one stable state to another stable state. The process or passage between these states is regarded as causing feelings of disconnectedness as the person becomes aware that they are leaving behind what is familiar. Patterns of responses to transition are seen to vary and could include changes in self-concept, role performance and self-esteem or even illicit feelings such as anxiety or depression. Meleis et al. (2000) further defined a transition as an experience in which the following occurs: a person's everyday life is disrupted which results in changes that occur over a timespan; the person is aware of being in this period of change; the person begins to engage with the process and identify new methods of living and being; there are critical points and events in the process. The transition period in relation to moving from primary to secondary school can thus be seen to include the final term of primary school, during which time the

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student is familiar with the routines and expectations of this environment but is beginning to become aware that they will be leaving this behind, up to the time at which they have established new patterns of behaviour and have become familiar with the routines and expectations of secondary school. Critical points and events for students transitioning to secondary school might include secondary school open days, choosing a secondary school, the last week of primary school and the first day and term of secondary school. Clearly, this can't be depicted as a universally fixed period of time but rather the length of the transition from primary to secondary school will vary from student to student. Schumacher and Meleis (1994) conducted an extensive review of the literature and identified three indicators of having reached the end of a healthy transition: mastery of new behaviours, a perception of personal well-being and a contentment with interpersonal relationships. Successful transitions were found to be facilitated through preparation, acquisition of the relevant knowledge and skills, social support and the fostering of realistic expectations as to what the new situation will be. Students could be seen as having a successful transition if they have become familiar with their new timetable and school environment; have a perception of belonging and being content to be in school; feel that they have made friends; and have mastered new skills such as organising their locker, managing their homework and study load and bringing the correct books and equipment to school on a given day.

Whilst Meleis's Transition Theory (Chick & Meleis, 1986) helps to define what a transition is, Bridges's (1986) theory of transitions expands on the understanding of what the stages of a transition involve. His theories are frequently referred to when describing the stages of a transition (Mc Greevy, 2003). Bridges argues that transition is a lengthy process that occurs over three stages (Bridges, 2010). The first stage involves the person letting go of the previous situation, in this case their experience of primary school. In primary school, students usually only have one class teacher for an entire year, more or less the same class cohort for 8 years, and the position of being the most senior students in the school. As with Meleis's Transition Theory (Chick & Meleis, 1986) the 'letting go' stage is seen to include feelings of disconnection but Bridges (1986) also refers to this as a period of

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disillusionment with the situation being left behind. Bridges (2010) termed the second stage the “neutral zone” (p. 25) in which the person can feel confused and unsure of themselves as they are unclear as to what the new reality entails and what might be expected of them. There may also be a drive to discover what the new stage involves. Students moving to secondary school have to cope with changes in: routine, topography, and social and academic expectations, along with an increased need for self-direction and self-organisation (Smyth, et al., 2004; Jindal-Snape & Foggie, 2008). According to Bridge’s (2010) theory, until these changes become habituated, the students remain in the neutral zone and the longer time spent at this phase, the higher the rate of disorientation and anxiety.

A student’s ability to cope with letting go of the familiarity of primary school and with the ‘neutral zone’ of settling into the new environment and routine of secondary school will vary. Cheng et al. (2014) conducted a well-executed meta-analysis of the literature on flexibility in coping strategies and psychological adjustment. They had clear inclusion and exclusion criteria and the search was conducted using a range of appropriate databases with clear search terms. They found a strong positive correlation between being able to use a variety of coping strategies flexibly and psychological adjustment. They concluded that successful coping involves the ability to plan strategies that match specific situational demands, execute those strategies and then appraise the results in order to evaluate success and decide what could be done differently where necessary. When transitioning to secondary school this could translate to the student being aware of what the new demands are, devising strategies to meet those demands, executing the strategies and evaluating their effectiveness. This process involves good executive function in the areas of strategy formation, planning and performance monitoring. As discussed in the previous section students with Developmental Coordination Disorder have been shown to have deficits in executive function (Rigoli et al., 2012; Tal Saban et al., 2014) and this may impact their ability to devise strategies to cope with the new challenges afforded by secondary school which in turn may impact the length of time spent in the ‘neutral zone’.

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The final stage of the transition is described as the new beginning which can involve developing new skills and forming new relationships (Bridges, 2010). It is a phase in which the person has become comfortable with their new situation and experiences a new sense of meaning, control and a sense of being able for the challenge and thus it is similar to the definition of a successful transition in Meleis's Transition Theory (Schumacher & Meleis, 1994).

Transitions occur in a context and this will affect the experience of the person transitioning. Thus whilst it is important to understand the process and stages of transitions, it is also important to have a framework for conceptualising the overall context of transitions. Vrinoti et al. (2010) argue that the Bioecological Model of development (Bronfenbrenner & Morris, 1998) is the most useful model in understanding school transitions in context. Development is conceptualised as occurring through complex reciprocal interactions between the person who is evolving both biologically and psychologically and their proximal social, cultural and physical environments over time (Bronfenbrenner, 2005). These interactions are termed as "proximal processes" and are seen as "the engines of development" (Bronfenbrenner & Evans, 2000, p. 118) when they occur repeatedly over extended periods of time. The interaction between the process, person, context and time is seen as foundational to development (Bronfenbrenner & Morris, 2006). Novel proximal processes inherent in transitioning to secondary school can include using a locker, following a time-table, organising and prioritising homework requirements and socialising with a new set of peers and teachers.

Bronfenbrenner and Morris (1998) identified three sets of personal characteristics that could influence proximal processes and termed them demand, resource and force characteristics. Demand characteristics were initially termed 'stimulus characteristics' and pertain to characteristics that are immediately obvious to others such as physical appearance, age, gender or skin colour. Resource characteristics relate to the physical, cognitive and emotional resources of the person along with their skills, and force characteristics referred to differences in temperament, motivation and persistence. This model highlights the fact that the

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transition of students with DCD to secondary school is not just dependant on their level of motor skills or executive function but also on factors such as their stage of biological or neurological development, their intellectual ability, frustration tolerance, motivation to learn and ability to persist.

The 'context' element of the model includes microsystems, mesosystems, exosystems, macrosystems and chronosystems (Bronfenbrenner, 1994). The microsystem involves the immediate social and physical environment of the person thus for the student transitioning the primary environments influencing proximal processes are the student's school and home and the people therein. The mesosystem is concerned with connections between systems and involves the interactions between the student's parents and the new school along with interactions between the student's primary and secondary schools. The exosystem refers to the systems that influence the person indirectly through their microsystems and examples of this for students with DCD would involve policies regarding education and the provision of accommodations along with economic factors that would impinge on class size and school facilities. The macrosystem pertains to the ideologies and culture that an individual functions in, and acceptance of difference and the value placed on physical prowess would be relevant here. Lastly, the chronosystem refers to the influence of time, and events in time, thus the age at which the student transitions would be a factor here along with any traumatic event occurring at the same time such as a death or serious illness in the family. Arguably, a recent diagnosis of DCD at this time could also negatively impact proximal processes.

The Bioecological Model of development (Bronfenbrenner & Morris, 1998) highlights the importance of the wider context of the transition to the successful adjustment of any student to secondary school. A successful transition is seen in this model as the product of the myriad of inter-relationships between the physical, cognitive and emotional ability of the student with their social, physical, political, economic and cultural environments. Bandura (1977) argues that not only are the person's actual physical, cognitive and emotional abilities important but that their

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perception of those abilities is also important when determining how well they will cope with transitions.

Bandura's (1977) work on self-efficacy, which was central to his social cognitive theory, is helpful when considering why some students thrive and some do not on transitioning to secondary school (Joly, 2016). Self-efficacy refers to the individual's beliefs about their own capabilities to perform at tasks and to influence those events which impact their lives (Bandura, 1994). A student's self-efficacy relating to the transition to secondary school will impact their perception of how they will cope with the new demands of that environment. Arguably, a recent diagnosis of DCD may negatively impact their self-efficacy whereas if the student has had time to accept and find strategies to cope with their difficulties they may, in fact, have developed a strong sense of self-efficacy.

Bandura (1994) argued that people with a high sense of self-efficacy will view difficult tasks "as challenges to be mastered rather than threats to be avoided" (p. 71) and will be more likely to set goals for themselves for achievement for the future. A student's level of self-efficacy will therefore determine their attitude to school and their academic aspirations. Bandura (1994) proposed that the most effective way to build self-efficacy was through success experiences and through persevering through difficulties in order to reach a goal. Other methods of enhancing self-efficacy include the observation of people similar to themselves succeeding and being told by a credible person that success is possible. The opportunity to meet more senior students with DCD who are successfully managing secondary school may be helpful for these students in first year, along with the celebration of their own successes and the encouragement of parents and teachers who highlight the student's potential. Bandura (1994) also proposes that good management of stress and goal setting abilities will also help and these are strategies that could be taught prior to the transitioning process.

Bronfenbrenner and Morris (1998) highlight the importance of considering the wider context in their Bioecological Model of development. The context for the majority of participants in this current study was that of the Education System in

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the Irish Republic, with only one participant being educated outside of the Irish Republic in a relatively similar system in Northern Ireland.

There have been significant changes in educational provision for pupils with Special Education Needs (SEN) in Ireland over the last 20 years (Barnes-Holmes et al., 2013). Both the Education Act 1998 (Government of Ireland, 1998) and the Education for Persons with Special Educational Needs (EPSEN) Act 2004 (Government of Ireland, 2004) have been central in shaping these changes. The education system in Ireland is currently underpinned by the Education Act of 1998 in which the rights of all people to an education, including those with any form of disability or SEN, are enshrined. Students with DCD would meet the criteria of having a disability under section 2, part d of this act in which disability is defined as: “a condition or malfunction which results in a person learning differently from a person without the condition or malfunction” (p. 6). These students are thus seen as having particular educational requirements as in this Act special educational needs are defined as “the educational needs of students who have a disability” (p.8). This Act included a system for provision of resource teachers and Special Needs Assistants for students with an SEN in mainstream education, along with the establishment of the National Educational Psychological Service (NEPS). The older term ‘Dyspraxia’ continues to be used when referring to DCD within Irish Education policy and the condition has been designated as a ‘low incident disability’ (Department of Education and Science, 2005) which means that schools can apply for additional resource teaching hours to support these students. A student’s resource teacher in primary and secondary school is ideally placed to support the student during the transitioning period.

The EPSEN Act (Government of Ireland, 2004) was enacted in order to make further provision for the education of students with SEN. Fiscal constraints have prevented the full implementation of this Act (Barnes-Holmes et al., 2013) but the aspects that have been implemented include the establishment of the National Council for Special Education (NCSE); the transfer of resource allocation responsibilities from the Department of Education and Science to the NCSE; and the appointment of

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Special Educational Needs Organisers (SENOs). Individualised Education Plans for all students with an SEN were recommended in the EPSEN Act but this is not as yet mandatory (Barnes-Holmes et al., 2013) which, arguably, can mean a lack of consistency in the quality of support given to students.

In Ireland, it is recognised that the transition from primary to secondary school is a significant and challenging step for students (National Council for Curriculum and Assessment, 1999). Guidelines have been established for the transfer of information about transitioning students (National Council for Curriculum and Assessment, 2014). It is recommended that primary schools send the following to the secondary school: a copy of the student's sixth class report card which includes the results of standardised tests administered by the school; the 'Special Education Needs Summary Form' (when applicable); 'My Profile' which is written by the student and 'My Child's Profile' which is written by the parent(s) or care-giver. Although these measures will enable schools to have a clearer perspective on the needs of students with DCD, it can't be guaranteed that this type of information is disseminated to individual teachers and thus a class teacher may be unaware of the needs of students with 'invisible' disabilities such as DCD in their class.

Leaving primary school and moving to secondary school can be viewed as a rite of passage. For many students it also coincides with the biological and social changes that mark the transition from childhood to adolescence (Riglin et al., 2013). This section of the literature review highlighted the complexities involved in this process of transitioning. The student's social, physical, political, economic and cultural contexts along with their abilities and perception of these abilities were all ~~showed~~ shown to be integral to a successful transition to secondary school. The transition period was conceptualised as including the final term of primary school in which time students are familiar with the routines and expectations of this environment and are beginning to become aware that they will be leaving it behind, up to the time at which they have established new patterns of behaviour and have become familiar with the routines and expectations of secondary school. A transition was thus seen as a period of time that could not be universally defined but rather was

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dependant on an individual student's ability to accommodate to her/his new environment.

2.6 Transitioning from Primary School to Secondary School

Introduction

Annually, more than 50,000 young people in Ireland make the transition from primary to secondary school (Smyth et al., 2004). It has been argued that there is little continuity in learning between primary and secondary schools in both the Irish (Mc Cormack et al., 2014) and British Education-education Systems-systems (Jindal-Snape & Foggie, 2008). This lack of continuity can make transitioning challenging for any student, along with the fact that transitions produce changes in psychological state, time use, habits and relationships (Nortier, 1995). This section of the literature review builds on the preceding section by engaging with the literature relating to the experience of transitioning to secondary school for students both with₂ and without₂ disability. As this literature pertains directly to the research topic of this thesis, an in-depth scoping review was performed which included the creation of a table outlining the aim, methods, sampling procedures, measures and methodological issues of each of the research articles included.

Literature Search

The following databases were used for this search: AMED, CINAHL, Embase, ERIC, PsychARTICLES, and Scopus. A full list of the terms used for searching the databases is outlined in appendix one. The following inclusion and exclusion criteria were set in order to enable the selection of literature that would be most relevant to the current study:

Inclusion Criteria. Studies were selected for review when they met the following criteria:

1. Related to students' experiences of transitioning to mainstream secondary schools
2. Participants transitioning were aged between 10 and 13 when in first year of secondary school

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3. Participants could be with or without any SEN (other than those in the exclusion criteria)
4. Articles from peer reviewed journals in the English language
5. Research articles published through reputable sources such as the Economic and Social Research Institute (ERSI) or government agencies.
6. Articles could be research articles, scoping reviews or systematic reviews

Exclusion Criteria. Studies were rejected if they did not relate to the current study and thus the following types of studies were excluded:

1. Studies exclusively about transitioning to non-mainstream or special schools.
2. Studies exclusively involving students with intellectual disability, autism, students with a psychiatric disorder or other medical disorders apart from DCD
3. Studies conducted outside of Ireland and the United Kingdom
4. Opinion pieces
5. Research that exclusively measured the effectiveness of specific programmes of transitions

The publication date for commencing the literature review was not set prior to the search but rather was driven by the literature that emerged. Initially only articles from peer reviewed journals were used but research published through the ERSI and other government agencies emerged, that were relevant to this study, so the inclusion criteria was updated to include these studies. As the current study had participants from both Ireland and the UK (one participant from Northern Ireland), studies outside of these geographical regions were excluded to prevent the inclusion of systems that might be too diverse to be relevant.

The majority of articles were located through the database ERIC. The search through the databases: AMED, CINAHL, Embase, PsychARTICLES, and Scopus yielded 13 articles which met the inclusion criteria for this review. The search via Eric initially yielded over 3000 potentially suitable articles thus the search range was narrowed to last ten years which yielded 957. The articles which exclusively

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pertained to countries other than Ireland and the UK was removed leaving 577 potential articles. The abstracts of each of these articles were read to ascertain which might meet the inclusion criteria and 33 of the studies remained following this process. Following a more in-depth read of each article only 14 were found to meet the inclusion criteria. Five of these articles had already been found in the first search via the databases: AMED, CINAHL, Embase, PsychARTICLES, and Scopus thus the search via ERIC yielded 9 new articles making 22 articles in total – 13 articles from the initial search and nine from the search on the ERIC database. An analysis of the findings of each of the articles demonstrated that no new data was emerging and thus the data was effectively saturated. Due to this 'saturation' the decision was made not to go further back (beyond the last ten years) in terms of the search on the data-base ERIC. The following table gives an overview of the 22 articles that met the criteria for inclusion in this review:

Table 1: Articles Selected for Scoping Review

Articles in which a quantitative methodology was used:

Authors and Where participants were located	Aim of study	Methodology Used	Participants	Measures	Methodological Issues
1. Choi, (2012) UK	An exploration of the impact of the Protective Behaviours (PBs) programme on student's academic attainment and school attendance during their transition from primary to secondary school.	Quantitative – quasi-experimental	Convenience sample of 37 pupils in year 7 who received the PBs programme at the final half-term of Year 6 and 37 matched peers in Year 7 pupils who did not receive the PBs programme.	Percentage of total attendance with the number of unauthorised and authorised absences. Scores on the National Curriculum level in English and mathematics.	Convenience sample impacts the generalisability of the findings. All participants were from a secondary school located in a relatively affluent area which may impact application of findings. There was a high amount of missing data, especially for the control group, which coupled with the sample size may have statistical power implications. Reliability is impacted as the PBs programme used is only partially described and confounding variables such as other support given by the schools is not accounted for.
2. Evangelou et al. (2008) UK	To investigate the factors that make a successful transition from primary to secondary school	Quantitative - survey research. Qualitative - Unspecified approach	A purposive representative sample of 550 children in their first term at secondary school and 569 of their parents Officials from 6 local authorities with responsibility for	Self-designed questionnaires for parents and children. Semi-structured interviews with Local Authority officials Interviews with the 12 selected children.	Quantitative data was primarily nominal leading to a descriptive analysis but due to the number of participants findings are still useful but generalisability is impacted by sampling procedure. Data analysis of interviews was unspecified thus rigour is weak,

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			transition (n=unspecified).		there is no clear qualitative research method or theoretical underpinning to the research.
3. Gillison et al. (2008) UK	An investigation into changes in quality of life immediately following the transition to secondary school.	Quantitative – survey research	Convenience sample of 63 Year 7 students (age 11–12 years) attending a UK coeducational secondary school who completed questionnaires on 3 occasions: 2 nd week, 4 th week and 10 th week of first term of secondary school.	KIDSCREEN Self-report Questionnaire (Ravens-Sieberer et al 2005) Need Satisfaction in the Workplace Questionnaire (Deci et al 2001) – adapted	Convenience sample impacts the generalization of results. Reliability and validity of measure impacted by adapting it. Intervals between data collection were short but this could also be perceived as an advantage as it indicates how quickly the students perceived a change in quality of life during the transition period.
4. Jordan et al. (2010) Northern Ireland – UK	To examine the relationship between components of emotional intelligence and academic performance in English, maths and science in students in their first year of secondary school.	Quantitative – correlational design	Convenience sample of 86 children (49 males and 37 females) aged 11–12 years during their first year of secondary school.	The long form of the Bar-On Emotional Quotient Inventory Youth Version (Bar-On & Parker 2000). Exam results in English, maths and science.	Sampling method negatively impacts generalizability. Application to other populations is also negatively impacted by lack of description of participants and the fact that they all attended one type of school – the same grammar school. Clear outline of statistical analysis with clear findings and conclusions.
5. Ng-Knight et al. (2016) UK	An investigation into how self-control develops during early adolescence (first year of secondary school), what influences its development and whether this varies across individuals.	Quantitative – survey a three-wave longitudinal, multiple-informant cohort study	750 children in final year of primary school and 745 of their parents 1712 children in first term of secondary school 1653 children in final term of secondary	Brief Self-Control Scale (Tangney et al 2004) Iowa Youth and Families Project Interaction Rating Scales (Melby et al 1993) Puberty Development Scale (Petersen et al 1988)	Study measures perceptions of self-control rather than actual self-control thus results must be viewed with this in mind. Missing data sets were dealt with in the analysis.

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			school and 1594 of their teachers	Strengths and Difficulties Questionnaire (Goodman 2001) Secondary Transition Adjustment Rating Tool (Rice et al 2015)	
6. Riglin et al. (2013) UK	To examine the temporal relationships between psychological functioning and academic attainment in the first year of secondary school	Quantitative – Survey approach. longitudinal prospective research design	262 pupils (143 boys, 119 girls) mean age 11.25 years. 202 pupils participated in the reassessment (113 boys, 89 girls), mean age 11.78 years	‘Short Mood and Feelings Questionnaire’ (Angold et al 1995). Subscales of the ‘Screen for Child Anxiety Related Disorders’ (Birmaher et al 1997). ‘School Concerns Questionnaire’ (Rice et al 2011). ‘School liking scale’ (Solomon et al 2000) ‘The Strengths and Difficulties Questionnaire’ (Goodman 2001). ‘The Guess Who Peer Assessment Measure’ (adapted) (Coie & Dodge 1988) National Tests of English, Math and Science	Findings may be impacted by self-report and peer-report questionnaires used to assess psychological functioning in this study as opposed to clinical interview measures. Convenience sample impacts generalisability. Cross-lagged coefficients are open to the influence of measurement error and this may have impacted their findings in relation to conduct problems. The analysis accounted for the students who did not participate in reassessment.
7. Thornton et al. (2016) Ireland	Study was part of ongoing research regarding children growing up in Ireland. This phase of the study was designed to	Quantitative - Longitudinal survey research.	Representative sample of 7,400 children aged 13 living in Ireland.	Self-designed Questionnaires which included: Primary and secondary Caregiver Main	Comprehensive study which allows for a good range of data from different sources. Many of the questionnaires were self-designed which impacts validity.

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	learn about the children's school experiences at age 13.			and Sensitive Questionnaires; Child Main and Sensitive Questionnaire; Parenting Style Inventory; The Work Assignment Sheet Non-resident Parent Questionnaire. Drumcondra Reasoning Test and the British Ability Scales Matrices sub-test. One-day time-use diary Height and weight of Study Child. Strengths and Difficulties Questionnaire (Goodman 1997) Ten Item Personality Inventory (Gosling et al 2003).	Clear procedure for analysis of data.
8. Trend (2007) UK	To investigate gender differences in students' perceptions of school life and curriculum during their first year of secondary school.	Quantitative – survey research	A convenience sample of 195 students (86 boys and 109 girls) completed questionnaires before and after a 4 week induction period.	Self-designed questionnaires	As with many of these studies the questionnaires are designed by the researchers which impacts validity. Unclear how they got their questions and the scale for response is not given. Numbers of participants dropping out after phase 1 is not indicated.
9. Warburton & Spray (2008) UK	To examine the temporal patterns of approach avoidance	Quantitative – survey research.	Convenience sample of 140 pupils aged 10 - 11 years	Achievement Goals Questionnaire for Sport (Conroy et al 2003).	Authors state how missing data was dealt with but don't indicate how much data was missing. Convenience sample will impact

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	achievement goals, implicit theories of ability and perceived competence in physical education across the transition from primary to secondary school		Male ($n = 68$) and female ($n = 72$) from Year 6 of three primary Schools. Participants were then surveyed at 3 intervals in first year and numbers at each point were not given.	Conceptions of the Nature of Athletic Ability Questionnaire version 2 (Biddle et al 2003).	generalisability. Inferential statistics used to draw some interesting conclusion in the area of gender and PE.
10. West, Sweeting & Young (2008)	To investigate the impact of transitioning to secondary school on students' wellbeing and attainment.	Quantitative – cohort study.	Stratified non-randomised sample of 2586 students in year 6 (mean age 11) 86% of their parents (n =unspecified) Class teachers of participant (n =unspecified) completed a form on almost all 2581 of the children By age 13, sample was reduced to 2371 participants.	Self-designed questionnaires to parents and children. 'Mini' interviews to 1 in every 5 participants in primary schools and 1 in 8 in secondary school. Parental Bonding Instrument (PBI) (Klimidis, Minas & Alta 1992) 'The Child at School' (Kysel et al. 1983) Modified version of the 10-item Rosenberg (1965) self-esteem scale Depression scale (Kandel & Davies 1982)	Study was not designed as a detailed investigation of the primary–secondary school transition and results were extrapolated from a larger study. However, the study has a large sample with extensive range of data. Transition data were collected at the start of year 2 in secondary school which may have impacted the findings as students may have difficulty remembering details of their transition. The data for the study dated back to 1994/5 which may impact the relevance of the study to the current context.

Articles in which a mixed method (quantitative and qualitative methodology) was used:

Authors and Where participants were located	Aim of study	Methodology Used	Participants	Measures	Methodological Issues
11. Governey & Cremin (2013) Ireland	To explore the perspectives of children with DCD in relation to their transition to secondary school.	Mixed methods study – Quantative – survey research Qualitative – phenomenology.	Five students with DCD in their first term of secondary school.	Semi-structured interviews at the start and end of their first term in secondary school, 'draw and write' techniques School Concerns Questionnaire (Thomasson et al 2006).	A phenomenology approach but did not state which type of approach was taken within this broad framework. Analysed the quantitative data from the SCQ using descriptive statistics but the value of gathering quantitative data with 5 participants is questionable
12. Smyth et al. (2004) Ireland	To examine the experience of first year students in Ireland transferring from primary to post-primary school with emphasis on their encounter with the curriculum and the psycho-social adjustment involved.	Mixed method Quantitative – survey research. Qualitative – method unspecified	567 school principals from a complete sampling frame. 916 students in the first term of first year and 750 of these students in term 3 of first year. 38 focus groups of 6 first year students, randomly selected from their classes. 103 key school personnel dealing with the participants and their transition.	Self-designed postal survey to school principals Semi-structured interviews of key personnel Self-designed questionnaire to first year students in term one and then in term 3. Semi-structured focus groups with students Drumcondra Level 6 reading and computation tests Focus groups 1 st years – semi structured	Generalisability of results was good as there was a good sampling procedure – a representative sample of 12 schools was devised following analysis of the demographic information from school principals. All the first year students from these school were invited to participate with random sample of students for the focus groups. However as the sample was not a true random results can't be fully generalised. The findings of the qualitative analysis need to be considered with caution as there was no clear research approach taken and no

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					theoretical underpinning given to the analysis.
13. Weller (2007) UK	An exploration of children's and parents' use of social capital during their secondary school transfer.	Mixed Methods – cohort research.	Representative sample of 588 children (aged 10–11) in their final year of first year and 76 of their parents. In years 7-8: 12 focus group discussions (75 participants) 81 students completed a questionnaire 20 individual interviews.	Self-designed questionnaires administered to participants in their final year of primary school. Semi-structured interview to parents re: admissions process and school choice. Semi-structured focus groups, questionnaire or semi-structured interviews to students in year 7 and 8 Semi-structured interviews to teachers.	Unclear methodology, does not discuss how data was analysed i.e. some results are given in percentages (quantitative descriptive) and some in quotes. Sampling procedure is not explained and it is difficult to know why they surveyed only 75 of the parents. Data is described rather than synthesised or analysed. Findings are presented with the literature review of other studies so it's hard to discern which is which and what the findings of this study actually are.

Articles in which a qualitative methodology was used:

Authors and Where participants were located	Aim of study	Methodology Used	Participants	Measures	Methodological Issues
14. Ashton, R. (2008) UK	To learn about the experience of children's transition to secondary school in order to improve current practice.	Qualitative: Partial grounded theory – authors stated that they described the data but did not do the step of generating theories.	1,673 pupils completed questionnaires (764 girls, 902 boys, 7 unspecified) in their final year of primary school. Classroom 'visits' occurred at three schools (n=unspecified)	Used the final open question in the Self-designed questionnaire asking for further comments re: transitioning. Class discussions and drawings re: what students were	Poorly designed qualitative study with unsuitable research method which was incorrectly applied. Data treated in a quantitative fashion with simplistic percentages given for each finding. However findings are somewhat useful to current study due to volume of response.

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				looking forward to and what their worries were.	
15. Barnes-Holmes et al., (2013) Ireland	To investigate the experiences of pupils with SEN making the transition from primary to secondary school in Ireland	Qualitative – ‘improvised’ grounded theory approach	Purposive sample of 32 pupils with SEN (22 from mainstream and 8 from special schools) and 32 of their parents 3 participants had DCD	Pre and post transfer focus groups and semi-structured interviews conducted for children or parents who did not want to be in focus group.	Reliability negatively impacted by ‘improvising’ the research approach. Research question and data appear better suited to a phenomenological approach thus findings may not be trustworthy.
16. Capel et al. (2007) UK	The purpose of this study was to investigate the transfer of pupils from primary to secondary school in relation to physical education.	Qualitative – research approach is unclear	Fourteen secondary school PE heads of department (ten male and four female)	Semi-structured Interviews	Does not state philosophical underpinnings or qualitative method of data analysis applied. Imposes codes on the data rather than letting the codes emerge on analysis which may have biased the findings. Four transcripts were cross checked for coding but there is no discussion of whether the coding was similar to the original.
17. Foulmer-Hughes & Prior, (2014) UK	To investigate the perception of children with ASD and/or DCD re: their transition from primary to secondary school.	Qualitative – research method /approach used was unclear.	A purposive sample of six children (five boys and one girl aged 10–12 years) in mainstream primary school then in mainstream secondary school.	Semi-structured interviews which contained both open and closed questions.	Poor reliability: the qualitative approach and approach to data analysis is unclear. Poor validity: Lacks a philosophical underpinning
18. Jindal-Snape & Foggie (2008) UK	To explore the impact of the child’s internal attributes, family, school and community on the success or failure of that child’s transition from	Qualitative longitudinal study – research approach unspecified	Purposive sample of eight children (four male and four female), seven of their parents (all female) and six support professionals	Semi structured interviews were conducted during the last two weeks of May of year six with follow-up interviews in November of year seven.	Credibility of research is negatively impacted by the unclear research approach with no description of the data analysis process. No clear theoretical underpinning. Data was not well

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	primary to secondary school.		(three male and three female) Children were selected as they had been identified as having potential difficulties with transition.		synthesised. Findings will thus lack transferability.
19. Osborn et al. (2006) UK	To consider the impact of the transfer from primary to secondary school in terms of changes in identity and construction of self.	Qualitative – case study	Twin siblings a boy and girl aged 11	Interviews – doesn't state type but appears to be unstructured. The children were interviewed in last term of year six, first term of year seven and end of year seven.	No discussion of method being used or of how data was analysed. Seems anecdotal. Comes in with assumptions that they then give 'evidence' for rather than having an open attitude to the research.
20. Tobbell & O'Donnell (2013) UK	An exploration of students experiences of transitioning to secondary school and their relationships with their new teachers.	Qualitative – ethnography Data analysis method : Anderson's (2002) focused problem approach	Three Secondary schools in different geographical locations in the UK. 65 students in first year took part in focus groups and interviews.	Main units of data collection were observations of interactions of staff and students - participant and non-participant observations. Field-notes. Document analysis. 65 students took part in one to one interviews and focus groups.	Well conducted qualitative study with clear approach to data analysis and clear philosophical underpinning to research method.

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Articles in which a scoping review was used:

Authors and Where participants were located	Aim of study	Methodology Used	Participants	Measures	Methodological Issues
21. Hughes et al. (2013) UK	To systematically review literature exploring the impact of transition from primary to secondary school re: concerns and psychosocial adjustment of children with SEN	Scoping review	29 Articles pertaining to children with a wide range of disabilities including intellectual disability, Specific Learning Disabilities (including DCD), Pervasive Developmental Disorders and ADHD	Critical Appraisal	Clear inclusion and exclusion criteria. Good range of databases with clear search criteria. Clear table giving an overview of the articles reviewed. Articles taken from a wide range of countries so may not be directly relevant to this study
22. Topping (2011)	To understand the teacher and the child's perspective on transitioning from primary to secondary school.	Scoping review	88 studies	Critical appraisal	Good range of databases but doesn't list the inclusion and exclusion criteria re: selection of articles. No table with overall findings. Very little critical analysis of the articles. Descriptive rather than analytical. Unclear re: where the research in articles was conducted.

Critical Appraisal

There were a broad range of methodologies used in the articles selected for the review: two scoping reviews, seven qualitative studies, nine quantitative studies and three with mixed methods. The two scoping reviews varied in quality with only one providing inclusion and exclusion criteria and a table of the articles with summary review (Hughes et al., 2013). Both reviews included studies from countries other than Ireland and the UK so some of the findings may not be directly relevant to the current study. The scoping review conducted by Topping (2011) offered very little critical analysis. The majority of the qualitative studies were of poor quality, two of the studies improvised a research approach (Ashton, 2008; Barnes-Holmes et al., 2013) which significantly impacted the trustworthiness of these articles. Four of the studies gave no indication of what research method was being used, gave no philosophical underpinning for their research and did not have any clear approach for their method of data analysis (Capel et al., 2007; Evangelou et al., 2008; Jindal-Snape & Foggie, 2008; Foulder-Hughes & Prior, 2014), thus the findings of these articles need to be treated with caution. There was only one qualitative study of good quality (Tobbell & O'Donnell, 2013) where an ethnographic approach was used and a reliable data analysis process was undertaken.

Seven of the nine quantitative studies adopted a survey research approach which allowed data to be gathered from a relatively large population. None of the quantitative research designs used random sampling thus none of the results of the studies could be generalised but the commonality of findings indicates they have applicability to populations outside of the participants. Seven studies included a cohort design which facilitated the gathering of data before and ~~post~~-after transition. Information was gathered on a range of topics including how transitioning impacts quality of life, academic attainment and self-esteem along with an analysis of the factors that impact the transition experience. There was also a study using a quasi-experimental design (Choi, 2012) to measure the effectiveness of a pre-transition programme and it was decided to include this in the analysis as there was a great deal of additional information on the transition to

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secondary school itself. Jordan, McRorie & Ewing (2010) used a correlational design to examine how components of Emotional Intelligence (interpersonal ability, intrapersonal ability and adaptability along with stress management) correlated with academic performance in English, maths and science. This study had a clear outline of the statistical analysis used which was well justified and there were clear findings and conclusions. However, they used a convenience sample of students from one grammar school which impacted the applicability of this study to wider populations.

Three of the studies used a mixed methods approach and only one of these studies stated the qualitative approach taken (Governey & Cremin, 2013), but the approach adopted within the broad school of phenomenological research was not specified. The latter study will be analysed in more detail later in this review as, in common with the current study, the participants used were students with DCD attending schools in Ireland. Weller (2007) ~~doesn't~~ did not discuss any of the methods of data analysis used but there is a good sampling procedure with a large representative sample of students, and data was also collected from the students' parents. Findings were presented as a mixture of quotes and percentages, however the relatively large representative sample of participants together with the multiple sources of information improves the applicability to these findings, though there remains the need for a cautious interpretation. Smyth et al. (2004) also devised a clear sampling procedure, with all school principals in the Irish Republic being invited to participate in the initial phase of their research. This enabled the researchers to collect demographic details which allowed them to collect data from a representative sample of schools. Random sampling was used within the schools, thus there is a higher probability of results being generalizable to a wider population, than in the other studies reviewed as part of this scoping review. The questionnaire they used for data collection was designed by themselves, and the findings of the qualitative element of their research needs to be interpreted with caution as no clear research approach was taken and no theoretical underpinning was given for the analysis.

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Few of these studies have been conducted in Ireland and there was only one that specifically targeted students with Developmental Coordination Disorder (Governey & Cremin, 2013) thus the latter study was critically appraised separately from the other studies due to its relevance to the current study. Governey and Cremin (2013) conducted a mixed methods study to gather the perspectives of five children with DCD in Ireland regarding their transition to secondary school. They conducted semi-structured interviews at the start and end of their first term in secondary school, together with 'draw and write' techniques and the School Concerns Questionnaire (SCQ) (Thomasson et al., 2006). The authors stated that they used a phenomenology approach but they did not state which type of approach was taken within this broad framework. They analysed the quantitative data from the SCQ (Thomasson et al., 2006) using descriptive statistics but the value of gathering quantitative data with five participants is questionable. Four themes emerged from the data: environmental concerns, academic concerns, social change and being a student. Governey and Cremin (2013) found that participants had problems with organisation, remembering equipment and books, and with PE. Participants were concerned about the amount of homework to be completed and ~~there~~ were apprehensive about making friends and the possibility of being bullied. They were also concerned that using a laptop would draw attention to them and lead to social exclusion. The participants described themselves as having settled into the role of being a student when they had adjusted to the environmental, academic and social aspects of the new school and they were concerned that the provision of extra resources, supports and use of laptops might interfere with this. Overall, the study had some interesting findings but lacked synthesis and were presented on a case by case basis rather than the findings of all five participants being drawn together and integrated to find any central structure; this may have been due to the lack of a clear phenomenological approach.

Despite the variability in the quality of the research reviewed, findings were similar and, though there remains a need to interpret them with caution, this added to the credibility of the conclusions drawn. In order to prepare for this stage of the scoping review, the complete findings from each of the studies were extracted and

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then analysed across the articles into themes. The themes that emerged were as follows: students' and parents' feelings prior to transition; pre-transition preparation; experience of students' and parents' post-transition to secondary school; gender differences; impact of transitioning on academic attainment; bullying; and factors that facilitate or hinder a successful transition.

Students' and parents' feelings prior to transition

West, Sweeting and Young (2008) found that students' concerns prior to transitioning to secondary school could be divided into those relating to the formal aspects of school, e.g. new subjects, homework requirements, organisation of belongings, and into those relating to the informal aspects of school i.e. the peer group. The majority of the students without SEN gave precedence to the importance of making friends and fitting in socially to the new school environment (Ashton, 2008; Topping, 2011).

Children with SEN also had concerns about making friends and fitting in with the new peer group (Barnes-Holmes et al., 2013; Foulder-Hughes & Prior, 2014). However, they were found to have numerous additional anxieties concerning the formal aspects of secondary school such as concerns about the type of support they would receive (Hughes et al., 2013), whether their new teachers would understand them (Barnes-Holmes et al., 2013), and whether they would get lost, be able to use their locker, organise their belongings effectively and cope with the amount of new teachers they would encounter (Foulder-Hughes & Prior, 2014). They had concerns about losing the familiar and caring environment of primary school, along with the solidarity and stability of peers (Barnes-Holmes et al., 2013). Children without SEN also expressed mixed feelings about transitioning and the following quote typifies their anticipation of the transition "I am excited, happy, sad to leave my friends and nervous" (Ashton, 2008, P.178).

Barnes-Holmes et al. (2013) included an investigation of the pre-transition concerns of parents of children with SEN in Ireland and found that they were very concerned about losing the support structures afforded to their child in primary school,

supports that they had often had to lobby for extensively. They also expressed feelings of frustration at the lack of clarity regarding the support their child would receive in secondary school and felt disempowered by the transition process. They felt reluctant to approach the secondary school as they were concerned about how this would reflect on their child. Parents of children with SEN felt that the priority issue for their children on transition was that of social integration and that school staff had a key role to play here.

Pre-transition preparation

Smyth et al. (2004) conducted a large-scale survey of transition practices in Ireland. They found that the majority of secondary schools offered an open day to prospective students and that most primary school students had the opportunity to meet staff from their new school prior to their first day of official attendance. Almost all of the schools involved in the study conducted at least a day's induction programme when the first year students arrived. The majority of schools perceived the class tutor to play a central role in supporting first year students and approximately half of the schools used a system of having older students act as mentors for transitioning students.

However, they found that few secondary schools had received information on the students commencing first year and that, even when they had, there was no formal system for disseminating this information to the appropriate parties. This study was completed before guidelines had been established for the transfer of information about transitioning students (National Council for Curriculum and Assessment, 2014) thus information regarding students transitioning since 2014 may currently be disseminated appropriately. Almost all of the schools conducted an entrance exam in order to identify students who needed learning support, place children in classes according to ability and / or track students' progress throughout the year. Only half of secondary school teachers reported being familiar with the primary school syllabus. A minority of students reported that the curriculum at primary school had not prepared them for that of secondary school whilst in

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contrast a third of students felt that much of what they learned in the core subjects in first year were a repeat of their sixth class syllabus.

Evangelou et al. (2008) conducted a similar study in the UK setting and found that 84% of children surveyed had felt prepared for their transition to secondary school. They reported that their family and / or teachers had prepared them by addressing their worries and offering them reassurance and support. They felt that they had been given a good explanation of what to expect in secondary school and had been given practical advice and tips on ways of coping. However, a notable 16% did not feel prepared but after the first term only 3% of those surveyed were still feeling unsettled and nervous. No details were given as to why this 3% might be having difficulties at this stage.

Experience of students and parents post-transition to secondary school

Arguably most children will find some aspect of the transition from primary to secondary school difficult. West et al. (2008) found that the majority of 2581 students who participated in their study recalled finding the adjustment to both school and the new peer group difficult in the beginning. Smyth et al. (2004) found that the majority of the 916 students in their study reported that they had settled into their new secondary school by the end of the first week, with a quarter of respondents needing a month and a sixth taking longer than this period. Topping (2011) conducted a scoping review and found that on average most students had adjusted by the end of the first term. Some students remained nostalgic about their primary school in the first year of secondary school and missed friends, social activities and trips (Smyth et al., 2004) and some reported missing the more 'family environment' of primary school in which they had formed close bonds with teachers. Missing these bonds with teachers was particularly prominent for children with difficult family lives (Jindal-Snape & Foggie, 2008).

Students reported many differences between primary and secondary school e.g. increased number of teachers and subjects, teachers' different expectations, longer school day, increased size of school and number of pupils, being one of the

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youngest students in the school (Smyth et al., 2004; Jindal-Snape & Foggie 2008). They generally reported that they enjoyed the new practical subjects taken in secondary school such as Art, Home Economics and Woodwork but felt there was a lack of continuity in the core subjects between primary and secondary school which could render these subjects difficult for some (Smyth, McCoy & Darmody, 2004; Jindal-Snape & Foggie, 2008). Warburton and Spray (2008) found that students also had a lowered perception of their competence in PE post their transition with this lowering in confidence continuing and plateauing at the end of first year (year seven in the UK system). Problems in this area among the general population are particularly relevant when considering students with coordination difficulties and it is notable that Foulder-Hughes and Prior (2014) found that the main concern of their participants with Asperger's Syndrome and / or DCD was how they would manage in PE. Girls have also been shown to have anxieties in relation to this area when transitioning to secondary school (Trend, 2007). Capel et al. (2007) found that the transfer from primary to secondary school in terms of the PE curriculum was not valued and resources to prepare students for this progressing were not promoted. Despite these challenges, Thornton et al. (2016) found that almost all of their representative sample of 7,400 children aged 13 living in Ireland who had made the transition to second-level education were broadly positive about their school.

Smyth et al. (2004) found that parents tended to perceive the lack of continuity between primary and secondary school as a natural part of the process of transitioning. They also felt less connected with the school in comparison to their experience of primary school and less well informed about the supports available for their children in secondary school. Thornton et al. (2016) found that the majority of parents remained actively involved in their child's education at this stage by helping them with homework.

Hughes et al. (2013) did an extensive scoping review of literature pertaining to children transitioning to secondary school with an SEN and found no significant evidence to suggest that children with an SEN have a worse transition experience

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than those without SEN. This may be due to the levels of support given to children with SEN by the schools during their transition. They did however find evidence to suggest that students with Specific Learning Disabilities are vulnerable to a decrease in confidence regarding their academic skills. A later study conducted by Thornton et al. (2016) found that children in first year with SEN reported fewer positive interactions with their teachers than their peers, with 20% reporting being praised for their schoolwork very often compared with 27% of non-SEN students. The differences between the two groups in relation to negative interactions were however not significant. Barnes-Holmes et al. (2013) found that children with SEN reported having difficulties dealing with the increased number of teachers and that it was hard to ask the questions they wanted to ask. However, they also reported that secondary school was much better than they thought it would be and that they liked the new practical subjects and the feeling of gaining autonomy.

Gender differences in transitioning

Smyth and Darmody (2004) found that girls took longer to adapt to the transition to secondary school than boys. They hypothesised that this might be due to the close social bonds the girls formed in primary school and the desire to form equally close bonds in secondary school and to feel unsettled till this was achieved. Thornton et al. (2016) found that girls in first year reported more positive and less negative interactions with teachers than boys. They also found that male students had more negative attitudes to school, and were more likely to misbehave at school rendering it difficult to know which is 'cause' and which is 'effect'. Riglin et al. (2013) found that the boys were more vulnerable to poor academic attainment when they experienced emotional problems than girls. Symptoms of anxiety or depression had not impacted on girls' grades whereas they did negatively impact the grades of the male students; in fact anxiety appeared to improve the grades of the girls. Jordan et al. (2010) also found that the boys' stress levels impacted them academically and this was particularly apparent in the area of science.

Impact on academic attainment

The articles reviewed did not demonstrate the dip in academic grades in the first year of secondary school that has frequently been demonstrated by other studies (Galton et al., 2000). Smyth et al. (2004) did find, however, that students were less confident in their academic abilities at the end of first year than at the beginning and there had been no improvement in their test scores in reading and maths following a full year of secondary school. They also found that trying out subjects in first year before making the final choices of which subjects to take at Junior Certificate did not have any negative effect on students' academic progress in reading or on how well they settled in. Choi (2012) also found no change in pupils' English and mathematics scores following school transition. Teachers were, however, found to be concerned about a possible academic deterioration in first year and were motivated to find strategies to ameliorate this (Topping, 2011).

Bullying

Prior to transitioning, many students reported being concerned about bullying (Smyth et al., 2004; Ashton, 2008; Jindal-Snape & Foggie, 2008; Topping, 2011). Hughes et al. (2013) found following their scoping review that children with SEN had a poorer social adjustment, with lower levels of perceived social support in first year in comparison to their peers. However, the majority of studies involved children with specific learning difficulties such as Dyslexia and ADHD, thus results may be more relevant to this population. They also found that this population had more experiences of being bullied than other children with different SEN or no SEN. Smyth et al. (2004) found that children from ethnic minorities (including Travellers) were more likely than other students to report being bullied.

Factors that facilitate or hinder a successful transition

Children's expectations of secondary school had a significant impact on the transition process and thus negative stories told to students by other children and family members increased their anxieties in relation to transitioning (Jindal-Snape & Foggie, 2008). Children who had experienced bullying in school and / or were from

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a lower socio-economic grouping were also found to have less positive transitions than other children (Evangelou et al., 2008; Topping, 2011; Thornton et al., 2016). Smyth et al. (2004) found that students with less confidence in their own abilities experienced more difficulties, as did children in schools where streaming according to ability was practiced. Children from ethnic minorities, including Travellers, were also found to have more difficult experiences than other children (Smyth et al., 2004; Topping, 2011). Children from families where parental encouragement was lacking also experienced worse transitions than those from families who expressed warmth towards the child and encouraged autonomy (West et al., 2008; Topping, 2011; Ng-Knight et al. 2016).

Conversely, children who were autonomous, had good social skills and managed change effectively had relatively successful transitions (Jindal-Snape & Foggie, 2008). Positive interactions with teachers, a good induction into the school, along with having a sibling attending there already were also found to help (Smyth et al., 2004). Successful transitions were also found to be more common in children with highly-educated mothers (Thornton et al., 2016). Finally, Weller (2007) also found that transition to the same school as friends could also be helpful even when these friendships weren't maintained in secondary school.

Conclusions

This section included a scoping review of the literature pertaining to transitioning from primary to secondary school for children residing in Ireland or the UK. The quality of the studies selected varied but there was relative consensus to the findings which rendered them very useful and applicable to this population. The main findings were that the majority of students find the transition to secondary school difficult but most of them have adapted successfully to their new environment between the end of the first week and the end of the first month. Children without SEN are most concerned about peer relations prior to transitioning whereas children with SEN have other more practical concerns such as fears around getting lost or not being able to organise their belongings. With the exception of children with Specific Learning Disabilities such as Dyslexia or ADHD,

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there is very little evidence that the transition of children with SEN is any more difficult than that of those without an SEN.

This chapter presented a review of the literature pertinent to the research question. It included sections regarding the nature of DCD, typical adolescence and adolescents with DCD. There was also a discussion of the nature of transitions and a review of the literature concerning transitioning to secondary school in Ireland and the UK. The following chapter presents the methodology for this study which includes both its philosophical underpinnings and research process used.

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3.1 Philosophical underpinnings to the Research Methodology

Introduction

This section presents an overview of the philosophical underpinnings to the methodology used in this research. A justification for the phenomenological approach is presented and Edmund Husserl's (1859-1938) philosophy is discussed. Martin Heidegger's (1889-1976) contribution to phenomenology is also referred to, but in less detail as his ideas are not central to the approach taken here. As has been previously discussed, the majority of research pertaining to DCD relates to children under the age of 12, hence there is a need for further research with the adolescent population. The transition into secondary school is an important life event in early adolescence and thus an important area of study. As this is a relatively novel field of research, it is important to learn from the adolescents with DCD themselves rather than assume that difficulties exist or impose a theory or testable hypothesis upon them, thus a qualitative rather than quantitative methodology was selected.

Qualitative Methodology

Qualitative research can be categorised into two broad classifications: interpretive methodologies such as historical research, grounded theory, phenomenology and ethnography and qualitative critical methodologies such as critical ethnography, action research, and discourse analysis (Taylor et al., 2006). Interpretive methodologies are used when the researcher aims to make sense of a phenomena of interest through rich description whereas critical research is aimed at systematically working through research problems to find answers and ultimately generate change (Taylor, 2013a). An interpretive approach was adopted for this research as it could not be assumed that any problems warranting a change to the education system existed. A phenomenological approach was selected within this

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paradigm as there was a clear phenomenon 'transitioning into secondary school' and the researcher wanted to explore first-hand accounts of this experience.

There are different approaches to phenomenology e.g. descriptive phenomenology and interpretive phenomenology and what unites these approaches is the underlying aim of discovering, exploring and describing a phenomena in rich detail in order to discover the essential elements of it (Taylor, 2013b). Edmund Husserl (1859-1938) is commonly referred to as the father of modern phenomenology (Hopkins, 2014). Husserl sought to develop a new science in the field of experience, in which the essence of that experience (what would remain despite modification) could be found through transcendental reduction and the suspension of judgement or presupposition (Husserl, 1931).

Husserl supported a Cartesian view of the individual; he viewed the mind (consciousness or soul) as being separate from the corporeal body (Hopkins, 2014). He proposed this on the basis that the perception of the external world was created via an awareness of external objects which were constructed by mere partial glimpses and contacts with them. He argued that these objects needed to be presented in a particular order to be understood and that if this order was destroyed only a chaotic series of sensations would remain and the ability to perceive physical objects and the world would be destroyed but that consciousness would still survive (Kenny, 2007). In this way he stipulated that consciousness comes before everything and to understand anything it is important to understand consciousness. This dichotomy of object and consciousness of object is perhaps best illustrated in Husserl's first book 'Philosophy of Arithmetic' (1891) where he attempts to explain numerical concepts by identifying the mental acts that were their psychological origin. Husserl purported that only consciousness had absolute being and that all other forms of being depend upon consciousness for their existence (Kenny, 2007); he thus saw phenomenology as intuitive science rather than a deductive one as unlike mathematics there were no axioms to build upon thus it came before scientific philosophy 'a priori' (Husserl, 1891).

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Husserl claimed that consciousness consisted of intentional experiences or acts (Kenny, 2007). Intentionality is a key concept in phenomenology and is used to depict the fact that consciousness is always directed toward some world or other e.g. real world, imaginary world or dream world and that these acts of consciousness grasp objects in the world rather than some external representation of them (Smith, 2008). An understanding of consciousness can thus be gleaned from exploring intentionality. The definition of Phenomenology as seen through the lens of Husserlian philosophy can therefore be encapsulated in his exhortation to 'return to the things themselves' (Hopkins, 2014) wherein the 'thing' he was referring to was the intentional experiences and what was being sought was the core or essence of that experience.

Husserl developed a phenomenological method in order to explore these core structures of human experience which firstly involved the 'bracketing' or putting to one side the presuppositions imposed by living in the everyday world (Smith et al., 2009). Husserl used the terms 'phenomenological reduction', 'epoché' and 'bracketing' simultaneously to explain the attitude needed to get to the core structures of an experience (Taylor, 2013b). The Husserlian method then proceeds through a series of phenomenological reductions which are aimed at enabling the inquirer to move progressively further away from their own preconceptions back to the essence of the phenomenon itself (Smith et al., 2009).

In his later years Husserl refined his earlier ideas by proposing a transcendental consciousness, a development which may have been prompted by criticisms that his earlier ideas trapped him in a form of solipsism (Hopkins, 2014). He made the distinction between immanent perception, which is the immediate perception of the individual's own mental acts, and states and transcendent perception which is the perception of past acts and states, of objects, events and what might be in the mind of another, the former being infallible and the latter fallible (Kenny, 2007). This enabled the inclusion of a 'life world' perspective whereby the world that consciousness creates is also shaped by the culture and assumptions in which we live.

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“I take myself to be a man with body and soul, who lives in a world with other men, lives the life of the world, and so forth” (Husserl, 1931 p.1089).

In this way he proposed that consciousness that creates the world is not part of it but rather is transcendental (Philipse, 1995) and he introduced the concept of transcendental phenomenological reduction as an attempt to view the phenomenon from the perspective of a generalised, pure consciousness (Giorgi, 2009).

Husserl sought to put presuppositions aside in order to reach the essence of a phenomena, whereas, Heidegger (1889-1976) saw these presuppositions as being a legitimate part of ‘Being’ and used hermeneutical inquiry to pursue the question of ‘Being’ in the world (Taylor, 2013b). At the forefront of Heidegger’s philosophy was the notion of ‘Dasein’ or ‘being-in-the-world’ which entailed thinking, acting and reacting along with caring about the world (Kenny, 2007). Husserlian philosophy underpins Descriptive Phenomenology whereas Heideggarian philosophy underpins interpretive Phenomenological (Smith, 2008). Both of these approaches were considered in relation to this study. Interpretive Phenomenology allows for an examination of how people make sense of their major life experiences. The researcher is making sense of the participant making sense of an experience (Smith et al., 2009). If applied to the current research the aim would have been to investigate how the adolescents made sense or interpreted their experience of transitioning into secondary school. The application of this method would facilitate the participant to learn from the experience in light of the present and the researcher would elicit the participant’s interpretation of their experiences rather than facilitate them to give a description of them. The descriptive approach is etic – that is an outsider’s view whereas the Heideggarian approach is emic (insider’s view) wherein there is an attempt to co-construct reality and the social world of the participants and researcher are fused (Hamill & Sinclair, 2010).

In order to decide which approach to use for the current research, consideration was given to the age of the participants, the fact that they were recounting a novel

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experience and that they had DCD. The decision was made that eliciting their description rather than their interpretation of the experience of transitioning would be significantly easier for the participants and thus cause them the minimum possible stress, engendering a more respectful and participant centred approach to the current research. Consideration was also given to the fact that the researcher worked clinically as an Occupational Therapist with children with DCD and an etic approach was selected in order to avoid the possibility of dominating the findings with a more clinical perspective on the issue.

Consideration was then given to the type of data analysis to be undertaken within the Descriptive Phenomenology framework. The approaches proposed by Colaizzi, Giorgi, and VanKaam (Reiners, 2012) were all deliberated upon in relation to which would be most suitable in achieving the aims of the study whilst being mindful of the needs of the participants. Colaizzi's method involves the researcher returning to the participants in order to validate the findings (Shosha, 2012). Other qualitative researchers warn against checking back with the participants on the grounds that the data have been synthesized and decontextualized and thus distanced from the participants so in all probability they would have difficulty verifying the findings (Morse et al., 2002). A further factor in deciding against this method was that if discussing the transition caused the participant any emotional distress, it would not be in their best interest to revisit the issues raised. There would therefore need to be a clear justification for going back to the participant and in the case of this research, there was not. Van Kaam's method requires the researcher to seek an intersubjective agreement with other expert judges (Butcher et al., 2001). The experts on the experience of transitioning to secondary school with DCD were the participants themselves thus a panel of outside expert judges were neither necessary nor in existence.

Following a critique of the three methods, Giorgi's (2009) method was selected for the research. In common with the other methods, it allowed for data to be collected via the narration of the concrete experience of the phenomena but the steps involving checking back with a panel of experts or checking back with the

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participants regarding the final findings post analysis were excluded. Data analysis using this method also allowed for a transparent and systematic guide to data analysis which adds to the transferability of the research and meets a criteria for rigour (Meyrick, 2006). Husserl's pure method requires the researcher to draw on their own imagination in order to visualise the phenomena from varied dimensions whereas Giorgi's method requires that the researcher also consider the same phenomena as it manifests itself to different individuals (Whiting, 2001).

Qualitative research incorporates a variety of approaches. Careful consideration was given to which of these would best facilitate an understanding of the experience of transitioning to secondary school for adolescents with DCD. A phenomenological paradigm was selected and both descriptive and interpretive phenomenological approaches were considered. A descriptive phenomenological approach was adopted as it was best suited to the needs of the participants and to the research aims. A review of the available methods of analysis within this framework was conducted and Giorgi's (2009) method was selected. The following section includes a description of how this method was operationalised.

3.2 Methodology – The Research Process

Introduction

The following section presents a description of the research process used in this thesis. It includes the research aims and objectives, recruitment strategy, participant demographics and the steps involved in data collection and analysis. There is a discussion of the methodological rigour of this process and of its ethical governance and emergent ethical implications.

Research Aims and Objectives

The aim of the research was to explore the lived experience of transitioning into secondary school by adolescents with DCD.

Objective:

To discover the meaning of transitioning into secondary school as it appears to adolescents with DCD.

Methodology

A qualitative methodology was used as the research aim was to obtain a greater understanding of the experience of transitioning into secondary school as lived by the students themselves. The approach taken within this methodology was that of phenomenology as the researcher sought to capture the lived experience of the students. As outlined in the previous section, consideration was given to the different schools of thought in phenomenological research, that is Husserl (descriptive) and Heidegger (interpretive) phenomenology (Smith, 2015) and for the reasons outlined in the previous section a Husserlian approach was taken. Giorgi's (2009) Descriptive Phenomenological method of analysis was then adopted within this framework. The unstructured approach to interview used within this approach was favoured as the researcher has clinical experience working with children and adolescents in this area which may have resulted in 'leading' the participants. Hamill and Sinclair (2010) describe the Husserlian approach as the description of an ordinary human experience as perceived by the individual which involves

bracketing, intuiting, analysing and describing. The goal of data analysis is to identify the essential components of the phenomena i.e. what is necessary and invariable about the experience, this is called phenomenological eidetic reduction (Giorgi, 2009). The researcher seeks to gain concrete descriptions of the lived experience of the phenomenon from participants who have had direct experience of it. Giorgi (2009) emphasizes the importance of understanding this description as something that is present to consciousness and that it is this perception of the experience that represents the phenomena so there is no claim that the experience exists exactly as it is described. In other words the participant is believed and the interviewee does not challenge the participant's version of events.

Pilot study

Ethical approval for this study was granted by the National University of Ireland, Galway. A pilot study was conducted prior to data collection; this was to allow the researcher the opportunity to practice conducting an interview using the phenomenological method and to afford an opportunity to reflect on the inclusion criteria for the study. The researcher was experienced in conducting interviews in the clinical setting and had prior experience interviewing participants using a semi-structured method as a research assistant to a previous PhD study thus it was important to practice the different interview style needed for the purposes of this research. Data from the pilot study were not used in the main study. As the sampling frame as a whole was limited, it was decided to use one participant for the pilot. Prior to the pilot the following inclusion criteria were established:

1. adolescents aged between 12 and 16;
2. in the Junior cycle of secondary school;
3. have completed at least two terms of the first year of secondary school;
4. have a diagnosis of DCD;
5. score at or below the 5th percentile on the Movement ABC -2;

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6. be in mainstream education.

An aim of the pilot study was to enable the researcher to reflect on whether a student in the third year would be suitable for inclusion. An unstructured interview was conducted with a participant who had just completed third year and was aged 16. The Movement Assessment Battery for Children -2 (MABC-2) (Henderson et al., 2007) was conducted and the participant was found to be at the 5th percentile overall. The interview was held in the participant's own home with the informed assent of herself and the consent her mother. Her mother was on the premises at all times throughout the interview. The participant had difficulty remembering her transition into secondary school and thus the first two original inclusion criteria were synthesised and amended as follows:

- Adolescents who had completed not more than the second year of secondary school (the age of the participant was not deemed to be a relevant factor).

Reflection on the interview itself demonstrated that there were many instances where it was 'led' as opposed to 'directed'. There were also instances where the participant went off topic and there was a lack of clear direction. Following this analysis it was decided to commence the interviews with the question 'tell me about your last year of primary school' and follow this with questions which probed the participants answers with invitations to 'tell me more about that'. The decision was also made to keep a reflective diary in order to check for any problems with the interviewing style. It had been planned to do all of the assessments using the MABC-2 (Henderson et al., 2007) in a separate session to the interview. However as the assessment appeared to enable the participant to get to know the researcher and thus relax in her presence the decision was made to do this on the same day as the interview.

In order to reflect and learn from the pilot study an analysis of the data was conducted. This emphasized the lack of direction by the researcher as there was a good deal of text that was irrelevant to the phenomena being studied e.g. the

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participant discussed at length what she planned to do for the summer. The process did allow for the emergence of an essential structure to the participants experience which was as follows: Transitioning into secondary school highlighted the participant's awareness of being different. It led her to try to hide the fact she had DCD which resulted in her not taking up many of the accommodations allowed to her, thus the meaning of transitioning for her was that of being different and attempting to hide that difference.

Recruitment strategy

Following the confirmation of ethical approval from National University of Galway, the Dyspraxia Association was approached to request permission to circulate an email inviting its members to participate in the study. Following a meeting with their board this permission was granted (Appendix 5). An email (Appendix 2) was then circulated in February 2013 to all members on the database of the Dyspraxia Association of Ireland inviting people to participate in the study and eight people, all of whom met the inclusion criteria for the study, responded. A further email was sent out in February 2014 and nine more participants responded at this time. Parents who responded to the initial invitation were sent more information about the project (Appendix 3) and an information sheet to be completed about their child (Appendix 4). Parents were then contacted by phone and this contact allowed them the opportunity to ask questions and enabled the researcher to arrange a convenient time to meet their child. The phone call also afforded the opportunity to informally check the level of DCD of the potential participant and this resulted in two respondents being excluded from the study as they did not meet the inclusion criteria of scoring below the 5th percentile on the MABC-2 (Henderson et al., 2007). This informal contact prevented the adolescent themselves being precluded from the study following assessment which may have been upsetting for them. A letter was submitted via the Dyspraxia Association website in May 2015 (Appendix 7) to thank the board and its members for their assistance in this research and to confirm that the recruitment phase of the study was now closed.

Inclusion Criteria

Adolescents taking part in this study needed to:

1. have completed not more than the second year of secondary school;
2. have completed at least 2 terms of the first year of secondary school;
3. have a formal diagnosis of DCD;
4. be in mainstream education;
5. score at or below the 5th percentile on the Movement ABC -2.

The DSM-V diagnostic criteria for DCD (American Psychiatric Association, 2013) indicates that having an ASD no longer precludes a diagnosis of DCD. An exclusion criteria for participation in this study was that participants did not have an ASD. It was decided that the problems typically experienced by people with ASD in the areas of cognitive flexibility and dealing with change (Attwood, 2007) could make the transition into secondary school particularly challenging which would make it difficult to discern the impact of having DCD on the experience. The DSM-5 was published after conducting the pilot study and two of the interviews for this research which further informed the decision regarding this exclusion criteria. An additional exclusion criterion was established regarding adolescents with an intellectual disability as it was hypothesised that this condition would also act as a confounder to the present study.

Exclusion Criteria:

1. Adolescents who have been diagnosed as being on the Autistic Spectrum.
2. Adolescents who have been assessed as having an intellectual disability.

The phenomenological method in human science recommends that there are at least three participants in a study (Giorgi, 2009). A total purposive sample of 15 adolescents with DCD was recruited through the Dyspraxia Association of Ireland and as data saturation was achieved from this sample, no further participants needed to be recruited. Demographical details concerning the participants is presented in the findings section of this thesis.

Data Collection

The MABC-2 (Henderson et al., 2007) was conducted prior the interviews and this time was used to build up a rapport and emphasise that the participant was the expert in their experience and that there were no right or wrong answers. Equity between researcher and participant as fellow human beings of equal status is a central tenet in Giorgi's approach (Whiting, 2001). A conscious effort was made to communicate this prior to the interview through the use of appropriate self-disclosure and the provision of a small treat as an acknowledgement of the researcher's gratitude for participation.

Data were collected using unstructured interviews with the participants in their own homes. Quality rather than quantity of the data is emphasised within Giorgi's method (Whiting, 2001) thus interviews were conducted for as long as the participant wanted to speak about their transition. Giorgi (1994) has criticised the shifting of philosophical positions in the data-collection phase thus the interviewer was conscious of maintaining the focus of the interview on the 'description of the phenomenon'. Englander (2012) stresses the need to be cognisant that the interview is being conducted for the purpose of finding out about the phenomenon and not the participant themselves. He argues that this enables the interviewer to maintain their role of researcher as opposed to that of clinician. As the researcher also works as an Occupational Therapist this consideration was particularly important.

Giorgi (2009) emphasizes the need to be fully present and conscious to what the participant is saying thus the researcher made a conscious effort to concentrate on the participant and where necessary paraphrased what the participant had said in order to ensure she had heard and understood them correctly. Giorgi (2009) also stresses the need to direct the interview when necessary whilst never leading the process. A reflective diary (Appendix 9) was maintained after the interviews and whilst listening to the transcripts in order to analyse the researcher's adherence to the descriptive phenomenological method. Reflections were made on the following:

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- The extent to which the interview contained a 'description' of the phenomenon
- The extent to which the interviewer maintained a 'researcher' as opposed to 'clinician' role i.e. the extent to which the interview maintained a focus on the phenomenon rather than on the participant.
- The extent to which researcher used leading questions.

It was not possible to define an exact time period in which the transition from primary to secondary school takes place, as a transition is seen to occur when a person moves from one stable state to another stable state and this is largely self-determined (Chick & Meleis, 1986). The stable state in the case of this research, was taken as when the student was in the final year of primary school. This is a time when students are generally familiar with the primary school environment whilst beginning to become aware of the imminent move to secondary school. A successful transition can be seen as being marked by the mastery of new behaviours, a perception of personal well-being and a contentment with interpersonal relationships (Schumacher & Meleis, 1994). This 'end point' will, thus, be individually determined and can't be placed within a precise time frame. The aim of this study was not to measure whether participants had successfully transitioned but rather to capture their lived experience of the process. Participants were asked to describe the final term of primary school including any visits made to the secondary school; the first week of secondary school; and the first two terms of secondary school and they were encouraged to expand on any additional experiences that they perceived as relevant to transitioning beyond these points.

The participants all chose to have their Interviews conducted in their own homes and a parent was on site at all times. Parents sat with their child for two of the interviews. Interviews were terminated when it was clear that the participant had nothing more to add and this varied from interviews lasting from 32 minutes to 1 hour and 20 minutes with the average time spent interviewing being 50 minutes. The final question in each interview was 'do you feel you have anything else to say

about your experience of going from primary to secondary school? The experience of being the interviewer and of listening back to the interviews made it clear that all participants discussed as much as was meaningful to them and to have lengthened the interview time would have entailed leading rather than directing the process. Interviews were conducted by the researcher herself which enabled her to immerse herself in the data and pick up on any nuance of expression. Interviews were recorded and then transcribed by the researcher which further enabled the process of data immersion.

Data Analysis

A descriptive analysis attempts to understand the meaning of the description to the participant based solely upon what is presented in the data. Husserl maintained that these descriptions could then be used to find the essence of the experience through eidetic (a priori) reduction (Bernet et al., 1999). The researcher used Giorgi's (2009) six steps for analysing data using the Descriptive Phenomenological method:

1. The transcript was read and re-read for sense of the whole. At this stage there was no attempt to interpret the text or derive any meaning from it. Phenomenological epoché or bracketing begins at this stage of the analysis and is maintained throughout.

The researcher reflected on her own assumptions regarding the experience of students transitioning into secondary school (Appendix 8) and referred to this before reading the transcriptions in order to set aside these assumptions and learn about the experience from the perspective of the participants.

2. The researcher then divided the texts into meaning units, this involved marking the text every time there is a significant shift in meaning. A table was set up for each participant and the meaning units were placed verbatim in separate rows in column one of this table.

In the following example, Participant F discusses how his books were organised in primary and secondary school. He states that his school had a separate locker room for students with extra needs and that he moved from out of this room to the

mainstream locker room. He then discusses some preparation that was done in primary school for the transition.

Table 2: Sample of meaning units

<p>Well, having DCD, everything was kind of laid out, all our books were kept in the cabinet and given out when we needed it. It was a big difference from when we moved into secondary, I coped well, had a good group of friends, and yeah, it was a big difference going into first year.</p>
<p>It wasn't too bad at the start, because I was in a smaller room with a group of teachers helping, and then I decided myself to move out, and go into the bigger world, and it was a bit of a struggle at the start, but I got used to it. All my friends were out, and I thought I'd spend more time with them, and I thought I'd learn better without someone helping me. I'd become more self-sufficient. They were there in case I needed them, but I didn't after a while, I decided I didn't need the help as much as the other kids. Moving out wasn't too bad, I had the two lockers from the start of the year, but I never used the one outside, so I just had to move the books from one to the other.</p>
<p>I pride myself in having one of the cleanest lockers in the school. I look at others and it's just a mess. Yeah. I always keep them spine out, and in a straight row – my Geography's green, because I associate that with the world, Geography. Things like that. But eventually I just got used to whatever hardback for whatever subject.</p>
<p>Secondary school students came in when we were in primary talked about what we should be expecting and stuff. They talked about the classes, and how you have different teachers for each subject, which was a lot different for us because we had the one teacher, so we didn't move about the place. So it was a big difference, but it helped, having them around.</p>

3. The researcher then began the process of transforming the meaning units into phenomenological psychologically sensitive expressions. The first step in this process is to re-write the meaning units in the third person. Giorgi

(2009) purports that this enables the researcher to remain clear that the analysis is from the perspective of the participant rather than the researcher.

Table 3: Sample of meaning units transformed into the third person

Participant A discusses what was difficult for him in secondary school

Meaning Unit	Transformation of meaning unit into the third person
<p>....but I can see why people would enjoy Home Economics. I wouldn't go up to someone and say don't do Home Economics, I'm just saying it's not my skill set. Home Economics is (pauses to think) I can do the cooking bit but the sewing bit is not within my skills. So I did business instead, which was much more within my skills</p>	<p>He states that he can see why some people would enjoy Home Economics and that he wouldn't go up to someone and say don't do it. He reports that it was not his skill set. He states that he could do the cooking but the sewing was not within his skill set. He did business instead which was much more within his skill set.</p>
<p>Well, the main way DCD seemed to affect me with was the sport which was as bad as I had anticipated. It was very dull, it was cold. Well, as I said the real three places it affected me was the sport, PE and Home Economics, so I'll just go through this in order</p>	<p>He states that the main way his DCD affected him in the first year was that the sport was as bad as he had anticipated. He found it very dull and he was cold. He reports that the three areas his DCD affected him were in sport, PE and Home Economics.</p>

4. The researcher then probes each meaning unit to find its central structure i.e. the main point that is being expressed in the meaning unit. It was important to be remain cognisant that the central structure at this point merely highlights the key issue of each unit as it appears and it is not an attempt to relate it to the study as a whole or to interpret it's meaning (Whiting, 2001). Neither does it involve breaking each unit down into a

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label. It can be hard to avoid jumping forward to the next step at this stage and the researcher found it helpful to frequently reflect on the following statement as she looked for the main point of each meaning unit:

“we don’t seek to develop a novel interpretation of the given, we trust that its meaning is already present and we seek to attend to that, to let that meaning speak to us” (Applebaum, 2011 p.522).

This statement was written on a card and kept in front of the researcher. The number of ‘transformations’ needed for each meaning unit to be transformed to its central structure varied. The following table provides an example of this process using the data collected from Participant I.

Table 4: Samples of transformations of data to the main point being expressed - Participant I

Transcription into meaning Units	Meaning units to 3rd person	Transformation 1	Transformation 2	Transformation 3
<p>Well, I noticed, my desk got really messy, and I'd always be forgetting my lunchbox. Em, forgetting books for classes, and we have merits and demerits, and I was getting a lot of demerits for homework not done, but I was doing it, I was just forgetting it.</p> <p>I didn't want to say it in front of the entire class.</p> <p>I think some teachers knew I had Dyspraxia, and gave me a bit of leeway, but I didn't want to be treated any differently, like.</p> <p>Well, it got kind of annoying, you'd know you had it done – you'd spent hours doing it – but you couldn't find it. It'd either be in the house, or you'd leave it in your locker, and you can't go to your locker during class.</p>	<p>He noticed that his desk got really messy and he'd always forget his lunchbox. He also forgot to bring books to classes. The school has a system of merits and demerits and he got a lot of demerits for not having homework done. He was doing it but just forgetting to bring it in. He did not want to say that in front of the class. He thinks some of his teachers knew he had Dyspraxia and gave him some leeway but he did not want to be treated any differently. He found it annoying that he'd spend hours doing homework but then couldn't find it. He'd have left the copies in the house or in the locker and</p>	<p>He had problems with organisation and with remembering things. His desk was messy and he always forgot his lunchbox. He also forgot to bring books to class and to bring his homework in even though he had spent a lot of time completing it. He thinks some of his teachers knew he had Dyspraxia and made allowances for him but he did not want to be treated any differently. Forgetting his homework was frustrating.</p>	<p>The participant had problems keeping his work space tidy and with remembering to bring required items to school. He was frustrated that he frequently forgot to bring in his homework. He got in trouble for this and did not want allowances made for him on the grounds of having DCD.</p>	<p>The participant felt frustrated by his problems with organisation and frequently got in trouble for forgetting to bring in his completed homework. He did not want any allowances made for him with regard to these problems because of his DCD.</p>

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	you can't go to the locker during class time.			
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5. Meaning units were then further reduced to capture the psychological implications of the life-world descriptions in other words to discover the meaning of each unit in relation to transitioning to secondary school. This is done using free imaginative variation and by attempting to generalise the data (Giorgi, 2009) so that it becomes easier to integrate it from various participants into one structure. This process was very helpful in reorienting the researcher back to the central objective of the research and basically involves considering what each of the meaning units means in relation to transitioning to secondary school. Once these reductions occurred the researcher read through the individual transcripts again to ensure the structures corresponded to the participant’s narrative.

Table 5: Reduction of the transformed meaning units into how they relate to the transition to secondary school - Participant K

Transformed Meaning Unit	Meaning in relation to transitioning to secondary school.
She hates home economics as she feels she is very bad at cooking. She found it hard to remember the sequence of steps and finds it very stressful. She couldn’t use the peeler and had to ask the teacher to do it for her, it was also hard to cut things.	Transitioning to secondary school meant that participant’s DCD related difficulties were highlighted.
It took her 2 months to learn where the classes were. She couldn’t use the map they gave her and had to follow the other students around.	Transitioning to secondary school meant that participant’s DCD related difficulties were highlighted.
Primary school was so much easier, all she had to do was find her coat and that was labelled by her mum.	Transitioning meant she needed to be more independent then she felt ready to be.

<p>She feels that secondary school is all work and no fun and that students aren't encouraged to do anything but learn. She felt she had more fun in primary and that people were more accepting there.</p>	<p>Transitioning meant moving to a more serious environment where it was hard to fit in socially.</p>
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Similar meaning units were then grouped together under structures. Structures consist of several key constituent meanings and the relationship among the meanings is the structure (Giorgi, 2009). This was firstly achieved in each participant's transcripts and then across the transcripts.

Table 6: Grouping similar transformed meaning under structures - Participant O

Meaning in relation to transitioning to secondary school.	Central Structure	Central Structure Transformed
<p>The final year of primary school was not very memorable with the exception of the school tour and last day celebrations.</p>	<p>He transitioned out of a system he had outgrown and was already focusing on secondary school rather than primary school.</p>	<p>Out growing primary school and switching focus to secondary school.</p>
<p>Preparation in primary school for the transition was not memorable.</p>		
<p>Transitioning out of primary school meant a chance to learn new things and escape boredom.</p>		

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The central structures from each of the transcripts were then compiled into a list (Appendix 10), this prepared the data for further analysis across transcripts. These central structures were then organised into common themes in preparation for the deeper analysis involved in step six of the process. These common themes / structures were as follows:

- Attitude / feelings about leaving primary school
- Experience of the 'Neutral zone' – in between leaving primary and starting the full schedule of classes in secondary school.
- Being in secondary school meant that the problems caused by having DCD were highlighted
- Experience of resource time / learning support and accommodations made for the participant by the school because of the problems caused by their having DCD
- Experience of the teaching environment outside of the Special Education Department
- Experience of the new social world of secondary school
- Experience of transitioning from the role of the primary school student into the more responsible role of a secondary school student
- The impact of having DCD on participants' identity /self-image during the transitional period
- Participants experience of family support

A complete table of this stage of the analysis with structures and constituents can be found in appendix 11.

6. Further phenomenological transformations were conducted on the structures in order to establish the general structure for the experience. In order to avoid a superficial analysis, time was allowed to elapse between the different phases of analysis to allow for reflection and the re-checking of structures.

The key constituents of each of the nine structures that emerged from step five were further analysed and transformed to find the central meaning within each

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structure. This was achieved through a series of transformations which commenced by grouping similar constituents together under each of the structures; finding the core meaning of each of these sub-constituents and then synthesising the core meanings of the sub-constituents into one central meaning for each structure (Appendix 12). These final structures were analysed in terms of how they related to each other in order to find the central meaning of transitioning to secondary school for the participants. When the general structure and key constituents were finalised the researcher went back through the transcripts in order to capture the detail for each structure and constituent. The general structure and the key constituents of this structure are presented in the findings chapter.

Bracketing

Bracketing in qualitative research has been described as being applied though vague and often superficial means (Gearing, 2004) thus it was important to give consideration to the methods available and decide which were most suitable to the current research. Husserl was a mathematician (Husserl, 1931) and the concept of bracketing derives from this field. In mathematics, brackets are used to separate one part of an equation from another so that the bracketed part can be focused upon in exclusion. In phenomenological research, brackets are used to temporarily hold in abeyance the foreknowledge of the researcher in order to avoid influencing the participant and thus enabling them to describe the phenomenon from their perspective (Hamill & Sinclair, 2010).

Gearing (2004) presents six different forms of bracketing: Ideal, Eidetic, Existential, Analytic, Reflexive and Pragmatic and each form represents a different epistemological position and ontological perspective. Whilst Husserl would have argued that it was possible to suspend all presuppositions and focus on the essences of the phenomenon (Ideal bracketing), later proponents of descriptive phenomenology did not (Tufford & Newman, 2010). Eidetic bracketing allows for flexibility in the process and there is a belief that it is neither possible nor desirable to be absolute in the bracketing process (Giorgi, 2009). It involves a shift in the

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natural attitude so that the researcher can be fully attentive in the present. Giorgi (2009) emphasises that past experience may at times be useful in our understanding of the present through the use of imaginative variation. He describes bracketing as intentionally not engaging with our past experience while we are focusing and discerning the present experience. It does not entail 'forgetting' past experience but merely suspending it. Bracketing during the interview process allows the researcher to avoid influencing the participant's view of reality (Hamill & Sinclair, 2010). Bracketing during data analysis prevents the researcher from categorising the data on the basis of their own preconceptions and assumptions. Bracketing within this study was achieved in the following ways:

1. Prior to conducting the interviews the researcher reflected on her own assumptions and preconceptions regarding the phenomena (Appendix 8) and this reflection was consulted regularly to facilitate the bracketing of these assumptions.
2. A reflective journal was kept during the data analysis phase, on listening to each interview and completing the transcriptions the researcher reflected on the extent to which the interview was led rather than directed by the researcher. These reflections were typed and placed in an appendix to enable transparency (Appendix 9).
3. The majority of the literature review (as previously discussed) was not commenced until after the data collection and data analysis.

Methodological Rigour

There is much debate around what constitutes a good qualitative study and the criteria that can be used to measure one (Pereira, 2012). Although there have been many attempts to provide a framework for critiquing qualitative research (Law et al., 1998; CASP, 2013) there remains a lack of consensus on how to evaluate a study of this kind critically or even whether such a standard set of criteria would be appropriate (Murphy & Yelder, 2010). Meyrick (2006) conducted an extensive review of the literature on this matter and consulted with expert groups and practitioners in the field. This resulted in the publication of a model for assessing

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the rigour / quality of qualitative research which has been replicated, with permission, in Figure 1 which appears later in this chapter. She proposed that transparency and systematicity were the two core principles in the establishment of the quality of the research.

Meyrick's (2006) quality framework for qualitative research emphasises the importance of a clear statement of epistemological and theoretical stance. The epistemological stance taken in this study is that of Husserlian phenomenology and the theoretical stance is Giorgi's (2009) descriptive phenomenology. There was also the requirement for the selection of appropriate research methods and this was demonstrated through providing details as to how the research methodology and methods were selected, with clear justification for their choice. Objectivity of the researcher was one of the factors required in achieving systematicity (Meyrick 2006), this was achieved within this study through phenomenological bracketing, the method of which was described previously in this section.

Meyrick (2006) also proposed that a statement of clear aims and objectives was needed to establish systematicity and this has been provided in the current research along with a systematic outline of the process of data analysis. Meyrick (2006) stipulates that the model should not be seen as a complete set of boxes to tick but rather as a framework of choices to be made and acknowledges that different epistemological approaches will necessitate divergence from the model. As discussed in the previous section respondent validation along with the external validation of the findings was not conducted in this research as this did not fit with Giorgi's (2009) approach. Triangulation of methods was not used as it was decided that this would detract from the pure phenomenological analysis of the data in that it could impose presupposition and negate the phenomenological reduction in this research. Due to the nature of a PhD thesis, coding of the data by multiple researchers was not feasible.

Meyrick (2006) also argues for the need to establish transparency in qualitative research. She states that internal validity can be achieved through reflexivity and

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by establishing a clear qualitative audit trail. Reflexivity entails the examination of the impact of the position, perspective and presence of the researcher (Finlay & Gough, 2003) and this was achieved through the reflections made on listening and reading the transcripts (Appendix 9) and by the bracketing off of past experience and reinforcing the role of participant as expert. The appendices and descriptions of the methods and steps involved in the research facilitate the establishment of a clear qualitative audit trail. Giorgi's (2009) steps for data collection and analysis are systematic and allow for transparency thus also meet a criteria for rigour.

Meyrick's (2006) criteria for transparency were also achieved through detailed description of the recruitment strategy and participants along with the methods of data collection, which led to data that was responsive to analysis. It was important to establish that the findings were grounded in the data and not in the preconceptions or assumptions of the researcher. This was achieved through: the use of reflection throughout the data analysis and data collection process; continually re-visiting the data; allowing time to elapse between the phases of analysis; and re-checking the structures against the transcripts. A copy of the model is presented in the following figure with kind permission from the author. The items highlighted in yellow refer to the factors relating to transparency and the items highlighted in blue refer to factors relating to systematicity:

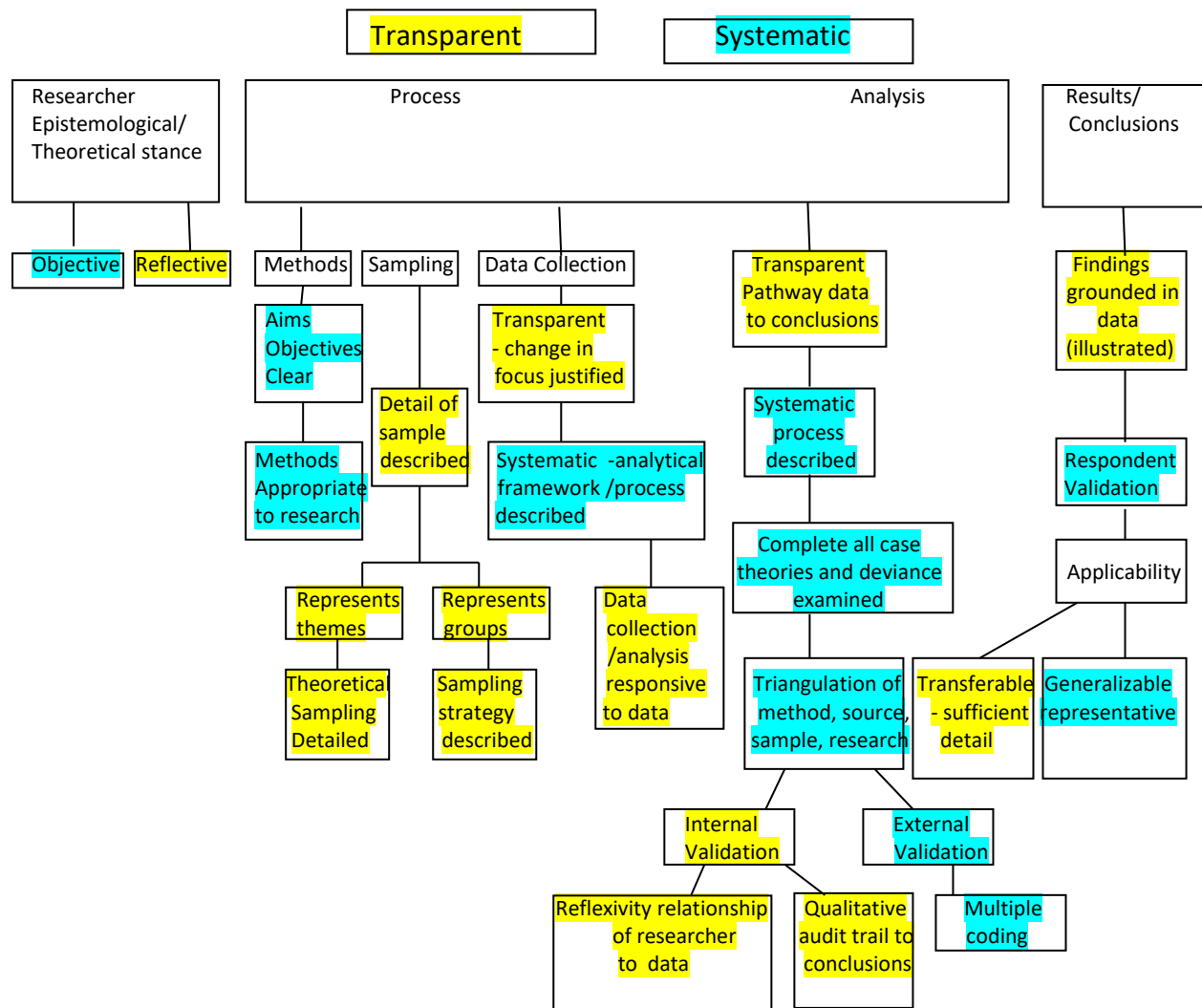


Figure 1 Quality framework for qualitative research. (Meyrick 2006 P. 803)

Ethical considerations

It is important to consider the child's perspective in a true spirit of respect and collaboration and this can only be achieved through ethically sound research practices. A working party for the Department of Children and Youth Affairs (2012) devised a guidance paper regarding good ethical practice for research with participants under the age of eighteen. Whilst the party reiterated the core ethical principles of ethical research i.e. minimising risk of harm; informed consent and assent; confidentiality and anonymity, they stipulated that there were a number of additional issues when working with this population. These issues comprised of the application of child protection principles; legal and policy commitments in relation to children and the establishment of child-centred, inclusive research approaches. Ethical approval for the research was given by the Ethics Research Board at the National University of Ireland, Galway. The board of management of the Dyspraxia Association also approved the study and agreed to allow the association to be used as a sampling frame for recruiting participants (Appendix 5).

Though every effort was made to prevent distress and thus minimise harm to the participants it is acknowledged that they could become upset when describing their experience of transitioning to secondary school. The researcher planned to counteract this by also discussing their perceived strengths and talents during the interview. There was time for debriefing after the interview and a parent was on the premises at all times and was available to be called upon to offer the participants additional support if they wanted it. When a participant requested that the parent remain with them during the interview this was facilitated. The researcher has had training in basic counselling skills and is an experienced Occupational Therapist and thus used to working with children thus was able to debrief the participants. If a participant became upset in the interview, this would be discussed with their parent so that they can also provide them with support needed.

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Parents of the adolescents who responded to the invitation to participate in the study (Appendix 2) were sent further information regarding the study (Appendix 3). If they then decided if they would like their child to participate and the child themselves assented to participation they returned the form containing demographic information about their child (Appendix 4). The researcher used this information to assess the probability of the child meeting the inclusion criteria and contacted the parents to inform them of this finding. Parents were then contacted by phone to organise a time convenient to them and the child for the interview and were given the opportunity to ask any questions they had about the study.

Prior to the assessment and interview the researcher gave the child information about the research and both the caretaker and child were asked to sign the consent form (Appendix 6). The child was also given the opportunity to ask any questions they had about the study. The researcher was aware that the child could have perceived a power imbalance between themselves and the researcher and it was hoped that this would be counteracted by establishing rapport before the interview and by emphasising the fact that they had the right not to answer questions they were uncomfortable with. They were also informed before each interview that it was their right to withdraw from the study at any time, without having to give a reason for doing so and that they could do this independently of consent from their parent. The researcher also asked the participant at appropriate junctures throughout the interview if they were feeling alright and if they wished to keep going. They were also informed that they could ask for a break at any time.

In accordance with the Data Protection Acts (Government of Ireland, 1998; 2003) all audio recordings, transcriptions and demographics were stored in a locked filing cabinet. Names were substituted with a code and these were used to label the voice files and transcriptions. The laptop on which the audio files were stored was password locked and is used solely by the researcher. Audio recordings were transcribed by the researcher and only the researcher had access to them. Participants were informed that the findings of the study would be used for the researcher's PhD thesis and that it was hoped that the findings would also be

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published in academic journals and given as papers at relevant conferences. The participants were reassured that there would be no identifying factors allowed in any mode of the dissemination of findings.

The Department of Children and Youth Affairs (2011) document concerning the protection and welfare of children was used to ensure that child protection policies and procedures were adhered to. This document specifies that Garda clearance is necessary for the researcher prior to conducting the study, this clearance was gained as part of the ethics procedure required by National University of Ireland Galway and was applied for via the Postgraduate Department of this university. There was a minimal risk of the child disclosing incidences of harm to themselves or to others e.g. disclosure about abuse, self-harm or suicidal intent. Participants were informed that the researcher would not be able to keep such information confidential and that such information would be discussed with the child's parent unless it would be unsafe to do so (i.e. if that person is the alleged abuser). Major concerns regarding the endangerment of the child would have been reported to the HSE Children and Families services or in an emergency situation to the local Gardai station. No such incidences of such disclosure occurred during the research.

The Department of Children and Youth Affairs (2012) document specifies the need for a child-centred approach to research and recommends that rewards be considered for participation. Each participant was given a small treat as a method of thanking them. They were not informed that this would be happening prior to the interview thus it could not be viewed as an inducement to participate. The Department of Children and Youth Affairs (2012) also recommended that the results of the study be made available to the participants and that efforts be made to ensure that they benefit from the findings (Department of Children and Youth Affairs 2012). The children and their parents were informed that they could have access to the findings on completion of the study. A paper will be delivered via the Dyspraxia Association so that all participants and their parents have the opportunity to hear about the findings. It is also planned that papers will be presented at teacher's conferences as a method of working on improving the

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experience of transition for young people with DCD directly. The researcher also allowed time for discussion of the assessment results (from the Movement ABC-2) with the child's parent.

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4.1 Introduction

This research was undertaken using the Husserlian approach of 'Descriptive Phenomenology' using Giorgi's (2009) method of data analysis. In this section, the findings from interviews with adolescents with DCD who have experience of transitioning from primary to secondary school are presented. The participants are described and the general structure of the experience together with the key constituents of this general structure are discussed. The commonalities and variations of the participant's experiences are demonstrated.

Review of Study Purpose

The aim of the research was to explore the lived experience of transitioning into secondary school by adolescents with DCD, with the objective of discovering the meaning of the experience as it appeared to these adolescents. In order to discuss the findings of this research, it is necessary to translate the research aim into the language used within Giorgi's (2009) approach to Descriptive Phenomenology. The term 'general structure' refers to the central meaning of the experience, or the meaning that is an invariant feature across all of the participants' descriptions (Giorgi, 2009). The objective of this study was to discover this 'general structure' (meaning of the experience of transitioning to secondary school) as it appeared to the participants. This 'general structure' needs to be understood in terms of its constituents and thus the 'general structure' and its 'key constituents' encapsulate the core findings of this research and meet the objective of the study.

Overview of Findings

The core findings of this study are presented below:

General Structure:

Transitioning to secondary school accentuated the participant's DCD related difficulties making them more aware of having the condition.

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Key constituents of the General Structure:

- Participants' reacted in different ways to their DCD related difficulties being highlighted.
- The factors that influenced participants' reactions to their difficulties being highlighted were as follows:
 - 1) Length of time participants knew they had DCD;
 - 2) their experience of sixth class and of leaving primary school;
 - 3) preparation for secondary school and the induction process experienced in secondary school;
 - 4) the accommodations made by the secondary school and experience of teachers;
 - 5) perceived peer acceptance.

4.2 Description of the Participants

A total purposive sample of 15 adolescents with DCD was recruited through the Dyspraxia Association of Ireland. Ten of the participants were male and five were female. The majority of the participants were aged 13 (n=10), one participant was aged 12 and four were aged 14. Eight of the participants were from the Capital and the others were from the provinces. All of the participants attended schools in their county of residence. Eight of the participants attended mixed sex state schools, five attended mixed sex private schools and two attended single sex girl's state schools. Six of the participants were in second year and nine were in first year. Five of the participants who were in first year had completed that academic year and were on school holidays when interviewed. Two of the participants had Dyslexia and had been awarded Irish exemptions. Another had Irlen Syndrome and a further participant had a 'Specific Speech and Language Disorder'. One of the participants had mild learning difficulties and had been awarded exemptions in both History and Irish. Nine of the participants scored at the 5th percentile on the Movement ABC-2 (Henderson et al., 2007), four were at the 2nd percentile, one was at the 1st with a further participant at the 0.5th percentile. The following table contains demographical information about the participants.

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Table 7: Demographics

Code and sex	Age	Date of interview	Type of school	Year	Other known diagnosis	Exemptions	Assistive technology awarded	Percentile on MABC-2
Participant A (male)	13 years	May 2013	Private Mixed sex	2 nd	None	After school sport	None	5 th
Participant B (female)	13 years	June 2013	Private Mixed sex	1 st	Dyslexia	Irish	Lap top but doesn't use in class just for exams.	5 th
Participant C (female)	13 years	August 2013	Post primary Mixed sex	1 st	None		No	5 th
Participant D (male)	13 years	August 2013	secondary school Mixed sex	1 st	Specific speech and language disorder	None	No	2 nd
Participant E (female)	14 years	October 2013	secondary school Mixed sex	2 nd	Mild learning difficulties	Irish and history	No	5 th
Participant F (male)	14 years	November 2013	Community College Mixed sex	2 nd	None	None	None	5 th
Participant G (female)	12 years	April 2013	secondary school Single sex	1 st	Irlen syndrome	None	Lap top	0.5 th
Participant H (male)	13 years	August 2014	Community College Mixed sex	1 st	No	None	Lap top	5 th
Participant I (male)	13 years	March 2013	Community school Mixed sex	2 nd	No	Irish	None	2 nd
Participant J (Female)	14 years	April 2014	Secondary school Mixed sex	2 nd	No	None	None	5 th

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Participant K (female)	14 years	July 2014	secondary school Single sex	2 nd	No	None	Awaiting using laptop but hasn't started yet	5 th
Participant L (male)	13 years	May 2014	Private school Mixed sex	1 st	No	Irish	Laptop	1 st
Participant M (male)	13 years	July 2014	Private school Mixed sex	1 st	No	None	laptop	2 nd
Participant N (male)	13 years	April 2015	Secondary school Mixed sex	1 st	No	None	laptop	2 nd
Participant O (male)	13 years	April 2015	Private school Mixed sex	1 st	Dyslexia	Irish	Laptop	5 th

4.3 The 'General Structure' of the Participant's experience

The general structure which emerged from this research was that transitioning to secondary school accentuated the participant's DCD related difficulties, making them more aware of having the condition. Secondary school students have to cope with a range of new experiences including an increased number of subjects and books; having to go to different rooms and have different teachers for each subject; dealing with a longer school day and an increased homework load; managing a locker and coping with new subjects that require differing skill sets. These changes place an increased demand on all students and students with DCD have the additional challenge of managing them with an invisible disability.

All of the participants indicated that they had difficulties in their first year as a result of having DCD. The majority of these difficulties were caused by problems with motor coordination, memory, organisation and planning however there were also difficulties for some participants relating to the levels of noise in their new environment and the feeling of the material in their new uniform against their skin. The following section will discuss the DCD related problems that the participants encountered in more detail. It should be noted that some participants use the word 'Dyspraxia' instead of 'DCD' and in the interest of remaining true to the transcripts, participants are quoted verbatim throughout, names of people or schools have been removed and substituted with 'xxx'.

Problems Caused by difficulties with Motor Coordination

People with DCD have significant problems with motor coordination which impact them in their daily lives (American Psychiatric Association, 2013). The participants were confronted with a number of new challenges which required a higher level of motor coordination than that which was needed for primary school when they transitioned to secondary school. There was an increased demand for self-management as it was no longer appropriate to ask for help to do everyday tasks

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such as paring pencils or organising books. Participant F demonstrates the more nurturing environment of primary school in the following quote:

“Well, having DCD, everything was kind of laid out, all our books were kept in the cabinet and given out when we needed it. It was a big difference from when we moved into secondary.” (Participant F)

The system of storing books in a locker was new to all but one of the participants and they had significant difficulties opening them, taking books in and out of them without them spilling on the floor and with manoeuvring efficiently in the crowded locker space.

“I couldn’t open the lock. I used to get people to do it for me, and then I sort of learnt about halfway through first year, I started to get more familiar with it.....But books would fall out of the pile, it was just all over the place” (participant K).

This resulted in some participants carrying all of their books with them to every class. They had, on average, nine classes a day and some classes required a text book, work book and copy books so the weight they carried was considerable and could cause injury to their backs over time. Carrying full bags instead of just the books for a period of classes identified participants as different and some tried to excuse this fact with a story they felt would be more acceptable than admitting they couldn’t use their locker.

“Well, most people had a really light bag, they could swap their books around with their locker, but I always had a massive bag. It made me stronger though! Yeah, they'd ask why I had a big heavy bag. I usually said I'd lost my locker key” (participant I).

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The position of the locker in the locker room also impacted the participants' ability to use it effectively. Lockers that were closer to the ground and in the midst of other lockers posed particular problems for these participants.

“Em, it’s a D locker, which is the lowest down, so I have to get down on my knees every time, but it’s also right in the middle of a bunch of lockers in quite a big bunch, I think the largest they can make. It’s an even number of lockers, so there’s no exact middle locker, but I’m in the middle of the block of lockers. Also, in first year, people are going to the lockers a lot more. In say fifth year and sixth year, people can take out all their books in a few seconds and be gone, but in first year, people are bustling around it, so it’s one of the worst, if not the worst locker in the school.” (Participant N)

Participants who brought their fully packed bags to class with them then found it difficult to get what they needed out of these bags. They became aware that they were slower at accessing materials than other students which further accentuated their differences.

“I notice, in the class and stuff, I'd be the last to take out my books, or my journal.” (Participant I)

Some participants had to carry laptops as well as heavy bags but they did have the advantage of not needing to handwrite. Eight of the participants did not use laptops and the increased writing load required in secondary school was causing them significant problems. They had difficulties getting the notes down during class time and often had to stay behind which made them late for the next lesson which was a source of stress. Staying behind and being late to classes also highlighted them as being different.

“It’s kinda like ‘oh, my friends are leaving but I’m still writing’. And then I'm late for the next class and I get in trouble.” (Participant E)

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Difficulties with handwriting also led to participants not being able to write their homework assignments down in their journals which meant that they would have been unable to do the required homework that evening. This led to students having to contact their peers to know what was for homework. Looking for help in this way may be acceptable occasionally but would arguably put the participant at risk of irritating others over time.

“Well, at the very end of the class, when you have 30 seconds left, you have to write it down (*homework*), and when the bell goes, you have to leave. I’m behind everyone. I would text people to find out what we had. You’d be asking people. And if you stay back, you’re late for the next class.”

(Participant J)

Some participants were unable to read what they’d written in their homework journal and would get chastised in front of their peers when they hadn’t done everything they had been asked to do. Participant O used a laptop but hadn’t developed a system for using it as a homework journal and was having difficulties knowing what he needed to do each evening.

“It’s hard for me to write homework down. I can’t read what I’ve written. I can’t type it on my laptop cos (*Sounding audibly distressed*) If I typed it, then I wouldn’t have the date right, and I’d forget it for the next day... Well, Ms. (*says teacher’s name*) is quite mean on homework, you might have forgotten your journal or you couldn’t write it down, or read it and therefore you forgot about it. And she’d give you a lunchtime detention. (Participant O)

Participants also had difficulties reading the notes that they’d made in class. This could disadvantage them significantly when preparing for exams. The strain of trying to get the notes written could also impact their ability to learn and listen optimally in class.

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“And people would speak out the notes, so you couldn’t take your time. And I'd write them in shorthand, so at night, I'd have no idea what they'd be saying.” (Participant K)

Participant L was very frustrated as he had been assessed by a professional who had recommended that he use a laptop the entire school day but his school were refusing to allow him to use it. As with many of the participants who handwrote he found he was unable to finish exams or demonstrate the depth of his knowledge sufficiently.

“I was very good at the stuff we were doing in History, the essay for that would be done in 20 minutes. The English essay was an essay I had done a long time ago, so I knew every word, it would have taken me 5 minutes, but I only had 10 seconds to write it. My slow writing wrecked nearly every subject, I was only able finish three tests out of the twelve. If I’d been allowed to use my laptop I would have finished easily, I wouldn’t even need extra time, and I could easily do it.” (Participant L)

There were other new challenges that required fine motor ability in secondary school. Subjects such as Home Economics, Technical Graphics and Woodwork posed particular challenges for the participants and again highlighted their difficulties to themselves and others. Participants found it very difficult to ask for help and wanted to be as self-sufficient as their peers.

“Well, it was particularly the hand sewing with the needles, em, in particularly threading the needles, I couldn't, I couldn't actually thread a needle without the little threader thing. I couldn't, em, if I didn't have it, I would have to ask someone else to do it for me. I tried and tried, but I actually can't. Asking someone else was a bit awkward because it felt like, em sorry you have to do this. I don't like having to put other people out. I don't like having to ask other people to do stuff for me cos it feels like I'm wasting their time. Em That was a bit annoying.” (Participant A)

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Participants became aware that they were not as able as their peers in subjects that required practical skills. Secondary school students typically rely a lot less on their teachers than they needed to when in primary school, so having to ask a teacher for help in a task that their peers had mastered highlighted their differences.

“I couldn’t use the peelers. My teacher had to do it for me, and then she’d give out to me, she didn’t understand that I couldn’t do it... The cutting. I couldn’t do that either. Yeah, I just don’t get how people do it. (Participant K)

Participants found it very frustrating to know what they wanted to achieve but to be unable to physically accomplish it. It was stressful to make so many mistakes in the process of completing practical tasks.

“Well, in Woodwork and Technology, the very practical side of things, I’m making a lot of mistakes in them and I’m not doing things properly. I feel upset in a different way in those classes, because I know what to do and how to do it, it’s just physically doing it can be very, very difficult. (*Sounds upset*). That’s the way for practical subjects. But at this point my only practical subjects are Woodwork and Technology, I’m not at all a practical person, I thrive far more at theory, so when it comes to that, I get stressed because I’m thinking I’m so much better at the theory than this, and I still can’t do it at all, even though I know how to do it so well.” (Participant N)

Participating in Physical Education (PE) and other school sports related activities also highlighted the participants’ difficulties. Many of the participants loathed these subjects as a result. Participant O was particularly vehement in the expression of his feelings about school sport.

“I hate it. It is pain, misery and death. Awful, tiring, painful, annoying.” (Participant O)

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Participants often dreaded PE and felt very self-conscious about it. They compared themselves to their peers and this made some of them feel sad and deflated.

“Yeah, especially because we’re doing handball at the moment, and we had to kind of catch the ball. Yeah, it’s hard, you have to like move around and get the ball. Missing it so hard. Em, they (*rest of class*) have really good catching skills. I do mind, I’d like to be better at catching.” (Participant E)

“We’re doing different stretches, put your right leg in front and stuff. Of course, that’s hard, and all the people say what are you doing (*says her name*)? I’m really bad at like, all the high jumps and stuff we have to do. I dread it, definitely.” (Participant G)

PE and sports were also difficult because participants had to change in and out of uniforms. Many of them had difficulties tying laces, doing ties and changing as quickly as the rest of their class. They frequently got in trouble for returning late to class after PE as they were unable to change in the time allowed. Whilst being late really upset some participants, as they had to walk into a class full of their peers, others felt they were doing their best and that teachers should be more understanding.

“They kind of got annoyed at that (*participant being late for class after PE*). I know it wasn’t really my fault though, so I just kind of shrugged it off. They just said I would have to be quicker for changing. It isn’t practical. I have to get changed, and then get to class on time, I’m slower at getting changed anyway, so I’m always late for Project Work, the class after ... one of the teachers said that wasn’t an acceptable excuse (*needing more time to change*)” (Participant M)

The participants who were unable to tie their school ties coped with this by having a parent tie it for them initially, then never completely undoing it, but rather

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loosening it and taking it on and off over their heads and then tightening it to put it back on again. Laces were more of an obstacle as some of the participants were unable to tie them and were in the difficult position of needing to ask peers for help. This could lead them to be marginalised socially.

“Yeah, my friends are tripping everywhere on my laces! It’s really hard in PE, we have to get our runners on, I always ask my friend to do it for me, em but a lot of people em, I remember I was at basketball, and I asked oh, could you do my lace for me? And this other girl started laughing, she thought I was joking or something” (Participant G)

Participants who ate school dinners also found it difficult as they were unable to use cutlery as proficiently as others. Arguably habits that might have been acceptable in primary school become less acceptable in secondary school as other students develop skills.

“Mum says I need to start using my knife and fork, it’s so funny, whenever I eat like, a steak, I just pick it up with the fork and eat it.
My Dad just ends up cutting it himself, cause I just stick it in.
They don’t eat like that in school.” (Participant E)

Transitioning to secondary school entailed a host of new challenges for participants and their poor motor skills hampered them in their path to achieving the level of self-sufficiency that would be typical at this stage. Their difficulties became more obvious to them than they had been in the more nurturing environment of primary school and without the support afforded in primary school these difficulties also became more obvious to their peers.

Problems Relating to Memory, Organisation and Planning

Students in secondary school are expected to organise their materials and manage their homework and study load independently. Participants had difficulties with this increased demand to be self-directed. Most of these difficulties were related

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to problems with memory and with their difficulties organising their materials but they also had some difficulties with planning and prioritising and with sustaining attention at school.

The majority of Participants had difficulties with tasks requiring them to remember materials or the location of rooms. This may be due to the fact that they needed to concentrate more on everyday tasks as a consequence of their poor motor coordination which made it harder to remember to perform necessary tasks such as bringing the right book to class. One participant exemplified this 'memory overload' well:

"People often say I get lost more than them, when I don't actually get lost, you're so concentrated on something else that when someone tells you to go to a room once, you do, but next week you have no idea." (Participant N)

Participants also had to remember what supplies to bring to each of the classes they had that day. They not only had physical challenges with opening, closing and taking books in and out of lockers, they also problems remembering what they needed to bring for that period.

"I just forget things, I'd head out and then realise 'oh, I've forgotten this, this and this!' (*sighs*) It's harder to organise myself when there are too many people around. My journal, my timetable, (*sighs*) my pencil-case, those type of things." (Participant O)

One participant was so worried about forgetting something that she brought her entire set of books and copies with her on a daily basis.

"I was the one with the heaviest bag in first year. The books were so heavy, and you were afraid that, teachers say when you have to bring work, but you think you heard that wrong, or teachers said last week, or was it this week, I

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used to forget everything. Yeah, you can carry your bag. But I had two bags in first year, I had a plastic bag I used to carry around.” (Participant K)

Forgetting to bring materials to and from class along with forgetting appointments caused participants a considerable level of stress.

“Oh yeah, I just pretty much forget things, I forgot my glasses yesterday, and with TG (*technical graphics*), I pretty much just put them down and then I realise I left them there during the night! Luckily they were there in the morning. I dunno, I always feel there’s something to worry about. There’s always something, and it’s really annoying when the teachers give out to me. Like, they’re cross when they don’t need to be. Yeah, there’s always like, different things I forget to do, I really like, I like to get involved in things, I’m in the Student Council, I feel like, I need to know where are the meetings, am I supposed to be here, trying to get involved with the talent show, music thing. I keep stressing about, if I was supposed to practice after school, I’m not gonna make it, so now I have to text my friend to ask them.” (Participant G)

The stress would in turn exacerbate any problems they had with tasks involving memory. Participant B demonstrates the impact of exams on her prospective memory.

“They (exams) can be quite stressful because you have to like remember a little bit more. Remember to have my laptop charged and you know if I wanted chewing gum because it helps me concentrate I’d have to remember to have some of that in my bag and what books I’d bring in to study like while I’m waiting or whatever and just stuff like that and just trying to remember” (Participant B)

Another difficulty experienced by forgetting to bring materials to class was that participants occasionally left their homework in the locker or at home. It was

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frustrating for them to have spent time on their homework and then to be unable to submit it.

“I was getting a lot of demerits for homework not done, but I was doing it, I was just forgetting it. I didn’t want to say it in front of the entire class. I think some teachers knew I had Dyspraxia, and gave me a bit of leeway, but I didn’t want to be treated any differently, like. Well, it got kind of annoying, you'd know you had it done – you'd spent hours doing it – but you couldn’t find it. It’d either be in the house, or you’d leave it in your locker, and you can’t go to your locker during class.” (Participant I)

The majority of the participants also had difficulties remembering the layout of the school and remembering facts such as the sequence of classes. They often used external strategies so they wouldn’t have to rely on their memories. These strategies varied from writing all the classes down for that day and keeping the list in a pocket, carrying around maps of the school and / or timetables and less successful strategies such as following other students to classes.

“I write out the classes I have, my Mum does that, on a small piece of cardboard I keep in my pocket. I kind of did it for the whole year. Everyone in class asked me what class is next, and I’d go oh, history or science. We had to keep getting new ones, they kept changing around history and geography. *(sighs loudly).*” (Participant M)

“You were following everyone around to get to class, when I was there late I had no idea where to go, one time I had to go to reception to ask where my class was. I didn’t have a clue.” (Participant J)

Participants were aware of differences between their ability to remember things compared to that of their peers. Participant M exemplifies this comparison in his observations of other students seeming to adapt to the new experience quicker than he did.

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“Other students caught on a lot quicker. Definitely. It was me and (*names another student he says has DCD*) who were left a bit clueless. Most of them adapted. When to hand in homework, taking down homework, notes. Yeah, definitely those were the main things, the timetable, getting to class, knowing what books to get. Every other term they started changing around geography and history, so I had the wrong books.” (Participant M)

Participants also found it very difficult to organise their time and their materials. Participant M states that even though he had tried to prepare for the transition to secondary school, he still found himself somewhat shocked by his difficulties with organisation.

“I worked on my organisation, I knew it would be difficult, I was expecting that, but not that difficult. I was just like, stranded, in a way marooned on a desert island. I tried to prepare for it, I knew it was coming, but when it came to it...(*doesn't finish sentence*)” (Participant M)

Other participants were also surprised by the problems they had with organisation in school. Participant C had always considered herself an organised person as she had worked to keep her bedroom tidy and her make-up and clothes organised. Her difficulties remembering her belongings impacted her perception of herself as being organised.

“Oh, well I wasn't very good at being organised (*at school*). I'm a very clean and tidy sort of person, so no, I didn't get why it was so hard at school, yeah. No, that's the thing, em I'm not, em well, my room is clean. Yeah, but in school I always seem to be forgetting things. That surprises me. I just don't understand it. Like, if I ever forgot my pencil case, that'd be a laugh, yeah, and then, if I forget to bring my homework in, that's the big problem.” (Participant C)

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Participants found that their problems with organisation and maintaining a tidy workspace “Well, I noticed, my desk got really messy” (Participant I) frequently resulted in them losing belongings.

“I lost my Journal and I had to get a temporary Journal and I couldn’t find it for a while and whenever I was trying to write something down real fast I couldn't find it. So I write it on my hands and when I got home I forget. I lose my journal for like a day and the classes I don't have it for, I don't write it (*homework*) down. Sometimes I don't have my Journal. The first time I lost it I'd put it under my books upstairs. Yeah like I couldn't find anything there the other day.” (Participant H)

The experience the participants had with forgetting materials and having problems organising their environment resulted in them feeling deregulated.

“I feel I’m still all over the place. I lost my key, and I had to pay to get a new lock on it. I do lose everything. I didn’t have a pencil case I just put one pen in my pocket and if I put it down it would be gone and this happened a lot.” (Participant J).

Participants also had problems dealing with the increased workload and the need to schedule time for homework and study. In primary school students are given homework to be completed that night whereas in secondary school students are expected to plan and prioritise when to complete assignments and they are also expected to study independently of being asked directly to do so. The cumulative difficulties of planning and prioritising, managing lockers and books along with the increased work load was very stressful for the majority of the participants. The difficulties that participants had with trying to organise themselves in the locker room were worsened by having to deal with the crowds of other students that were there. Participant N aptly expressed this feeling of being overloaded.

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“It – it’s quite difficult, (*sighs*) it’s kind of noisy and everyone has to move really quickly and there are crowds of people everywhere. You’re trying to get to the next class, which is a challenge in itself, it seems that I could deal with the stress and the difficult-ness of kind of the busyness and changing my books, and getting there on time, and planning things, but I also had to deal with the stress of – not necessarily the stress, the, I don’t know what the word I’m looking for is, the hardness of school and schoolwork, and actually doing homework, and actually studying and paying attention in class and stuff. It seems I could deal with that kind of pressure of school in primary school, but in secondary it kind of got much, much more difficult.”
(Participant N)

It was unsurprising, given the myriad of difficulties participants faced, that many of them had difficulties concentrating in class and two of the participants in particular seemed to have significant difficulties in this area.

“Everything distracts me. I can be distracted by anything unless I’m in the zone and working. Even when I’m in the zone and I realise I’m in the zone that distracts me.” (Participant M)

“I am very bad at listening, because I get so distracted easily.....No, I might just be doing my work, have a quick glance out the window and I see a bird and off thinking about that.” (Participant L).

Other participants found that their difficulties with concentration were caused by being exhausted due to the level of new challenges they were experiencing.

“Near the end of the day, cause you've had the frustration then of the whole day, and sometimes I’m so tired I can barely, like, pay attention.” (Participant G)

Problems caused by Sensory Input

Many of the participants found the level of noise on the corridors, locker rooms and even classroom very difficult to cope with. Arguably these problems may have been caused by their increased levels of stress.

“Crowds and the noise are difficult. Yeah, in the corridors and stuff. I just sort of got on with it, said ‘I have to go into the corridor’, and just did it. The locker room used to be packed, and I’d go in when everybody had gone. I’d stand outside and watch, just to see.” (Participant K)

Another participant also choose to isolate himself rather than deal with the noise or crowds. This could, however, put the participant in danger of being targeted by others for bullying.

“I always prefer to find a changing room on my own, rather than with all the people who are loud and noisy. Yeah, they’re often in groups, for some reason, so I can get a room to myself” (Participant O)

Two of the participants had problems with the sensation of the uniform against their skin and one found this so difficult that she had to have a uniform that was too big for her.

“We have like a whole size bigger for the uniform. The whole size up so it doesn’t touch my skin. And I hate the socks and you have to pull the socks up to here (points to her knee) and it’s all round you skin. Ugh.” (Participant G)

Conclusion

The ‘general structure’ or central meaning of transitioning to secondary school for the participants was that the experience accentuated their DCD related difficulties. The participants encountered a range of challenges in their new school environment that highlighted these difficulties. Their problems with motor coordination made some tasks difficult for them to do independently. This often

necessitated the need for the help of other students or teachers which in turn highlighted their differences. The increased need for self-direction accentuated the DCD related difficulties they had regarding memory, organisation, planning and prioritising. Some participants had the additional disadvantage of finding the increased noise levels in secondary school difficult and with finding the feeling of the uniform against their skin unpleasant. The following sections relate to the key-constituents of this general structure.

4.4 Key-Constituent of the General Structure - Participants' reactions to their difficulties being highlighted

Participants reacted in numerous different ways to their DCD related difficulties being highlighted as they transitioned to secondary school. Three of the participants accepted their difficulties and were happy to receive any help that was available. Five participants accepted that they had DCD but strove, as far as was possible, to deal with the related problems independently of any help the school could provide. One of the participants reacted very differently to the others and felt that his difficulties were the fault of the school staff who he perceived as not providing him with enough help. Three participants found they felt like outsiders and wished that other people would understand their difficulties as they had found that knowing that they had DCD made sense of why things were difficult for them. The three remaining participants found their situation difficult to accept and were overwhelmed by their problems.

The participants who accepted that they had difficulties and were happy to receive any help that was available, also readily accepted and were comfortable with being different from their peers.

“I don't mind being different. I've always been different. I'm just a strange person in general and I think that's a good thing.” (Participant O)

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This attitude of acceptance of difference meant that they had no difficulties accepting any accommodations that were made for them, even when these accommodations would be clearly visible to others. Participant B discussed how having something to fidget with helped her to concentrate when she was in primary school. She states that she would be happy to use a fidget device in secondary school too.

“I used to have a box of fidgets in primary school and there’d be like these squishy balls and like those tangles things, and like I have this stuff, I still have it, they let me take it with me. It's like this physio putty I think. I have it upstairs. I miss having fidgets because it's nice to just mess with something. I'd say I'd probably be allowed use one in secondary. I like the tangles because they move around quite easily, emm, you know, and are easy to put in your pencil case because they don't take up much room and then we also had, emm, I like the physio putty. I'd definitely use a fidget in secondary if they let me.” (Participant B)

These participants tended to identify with the other students who received help from the Special Needs Departments in their schools. Participant E was aware of which students were getting the most help and was keen to obtain similar levels of assistance for herself.

“I've noticed – there's xxx in first year, I'm getting along with her. She, this girl, she's in a wheelchair, and there's no wheelchair access in (*names school*), and it was terrible she finds it really hard to get upstairs as she had an operation on her knee. She gets help with her work and help getting around and the teacher comes over and helps her in class so she gets really good help. Well, I'd like to get just help when I'm not in class, or even when I'm in class, you know, the way when you have a full class, and the teacher is trying to teach everyone, and they can't really come to you, someone to help with that.” (Participant E).

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All of these participants had been aware of their diagnosis from an early age and all were appreciative of the help they were given.

“I used to be always coming out thinking I’d forgotten something even if I hadn’t forgotten something. I feel more organised now. What’s helped me is having the laptop and (*names his resource teacher*), she’s essential, and I like that the teachers don’t hassle me about the laptop. It’s a great school and I have great resource.” Participant O

The five participants who accepted that they had DCD but who were keen to deal with the related problems independently, had also been aware of their diagnosis from an early age.

“I don’t remember my age when I learned I had Dyspraxia, I was young enough anyway.” (Participant I)

These five participants were keen to be as self-directed and independent as possible, three of them had withdrawn from their resource hours when they transitioned into first year and only one of them used a laptop. Having DCD was not central to their identities and their friends weren’t other students connected to the Special Needs Department.

Participant A coped with his difficulties by rejecting things he wasn’t good at and focusing on what he was good at instead. This reinforced his perception of himself as ‘clever’ rather than ‘physically adept’ which impacted his attitude to exercise and may in turn impact his fitness levels in the future.

“I don’t think it affected my confidence as I think I am quite a confident person in general, which may be a fault, but I don’t think so. Well, anyway, em so it didn’t really affect my confidence. Em, it removed any thought that I might be able to do sports but I’d never had a lot of those, em, so any interest I had in sport, which I didn’t really have, was removed I felt, ehh. I don’t think

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that's a bad thing to be honest, I don't feel like that was a loss, but if I was to become interested, it didn't work, I think that's what the idea was. It didn't help me at all to become interested in sport. In fact it did quite the opposite, it repelled me away from sports. I was never, as well as having DCD, I've never been a great runner or had stamina or I've never been very fast. I've never been that strong. It's all in here (*points to head*). (*Pauses and sighs*), I suppose it just feels like, it makes me feel that the subject is worthless, em, it doesn't make me feel that I am worthless at all, it doesn't knock my self-confidence." (Participant A)

Participant D also accepted that he has strengths in some areas and weakness in others and he also choose to participate in things he was good at. In the following extract he was discussing how he was keen to succeed academically and was not overly concerned about his difficulties with sport.

"The first day was fine since we were getting assigned into our classes and I got into the top classes. PE was alright, eh, I had to do gymnastics but I wasn't all that good at that. Yes, rugby and football and all that. I do it in PE but not on a team as I'm not a big rugby or football person." (Participant D)

Participant I did not perceive himself as being able academically and focused on building his talents in sport instead. He had become actively involved in the Rugby team in his secondary school and his sense of self / persona was built around this pursuit.

"I'm into sport. I'm not much good at other things. Well, I like reading but I'm very slow, and I find watching TV boring, so, if I'd see lads messing about with a football, it'd be hard not to go and join them..... I got a talk one day, you're not allowed go to rugby training if you don't study. That kind of showed me the importance of study." (Participant I)

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Participant I wasn't a natural athlete but despite this fact, he worked hard on his weaknesses and he had achieved a good standard of performance. He was also gaining confidence and comradeship from his involvement which helped him deal with, and in some ways lessen the emphasis on, his difficulties at school. His perception that difficulties need to be overcome is clear from the following extract:

“Well, I wasn't good at it when I started, I was always picked last for teams, I always enjoyed it, but I wasn't good at it when I started out, but I really worked at it. I'm a really awkward runner, I suppose. Yeah, just as I've gotten more interested, you make yourself better, you do training after training..... And I know there's certain things I'm never going to be, I'm never going to be the best co-ordinator at catching the ball, so I work at the things I can work at. Well, I get muscly very quickly, so I work on that, and trying to throw a tennis ball at the wall and catch it. Yeah, at the start I wouldn't be able to throw a ball at the wall and catch it, I got a reaction ball that can bounce off in any direction. It's nice being good at something.” (Participant I)

He was knowledgeable about his DCD and he was resigned to having it, but he was, however, extremely uncomfortable with appearing different to his peers and did not want any allowances made for his difficulties in front of other students.

“I didn't want to be treated any differently, like. Especially when you're first going into first year, when you know people it's not so bad. I've told some of my closest friends. Yeah, and like, everyone has something..... The resource, and a lot of the teachers know I have Dyspraxia, they wouldn't shout about it, just help me with certain stuff, some of my closer friends help me organise stuff. Yeah, I don't like being different. Like, there'd be some teachers – the younger ones wouldn't announce it as much. The older ones would be a bit more old-fashioned. They'd give out to you for things in front of everyone, like if I'm late or forget stuff. Once the teacher'd turn around you'd grin and make sure everyone else could see you. Nearly holding back the tears like.” (Participant I)

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Participant M was not concerned with appearing different to others but, as in the case of the three previous participants discussed, he was keen to find solutions to his own problems.

“The organisation. I worked on my organisation I figured it out. I prefer figuring things out to being told what to do, Like, these, (*bracelets he made and uses as a fidget tool to help him concentrate*) I knew I didn’t know the first thing about them, so I googled them, and I found out.” (Participant M)

He had decided not to avail of resource time and the only accommodation he took up was the laptop as he found this worked well for him. He had no problem telling people that he had DCD but did not see it as central to his personality or identity.

“Yeah, but I don’t make it all that known that I have dyspraxia, I just get on with it. As it happens, I was writing something on the board in French – it was a challenge. And someone said ‘write faster!’, and I finished and turned and said ‘as I’ve said before, I’m dyspraxic, so I can’t write as fast as you.’ He said ‘We all know you have Dyspraxia.’, and I said ‘obviously not, because you told me to write faster!’” (Participant M)

Participant F started first year using a locker and break room that had been designated for student with special needs. He gradually moved away from these supports and in so doing associated more with students outside of this department and eventually he let go of all the accommodations offered including his resource hours.

“We had a room for students who were going through similar things to me, I think some of them were Dyslexian and stuff like that. They were very fun, but I always felt a stronger connection to outside, where the majority were. The help was there, it wasn’t like we were isolated, it was that we could go in and out whenever we wanted, but it was our private place where we could go

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in for help, and no-one would judge us. I met some of the other guys in the room, more students were coming in, and I was like right, there's not that many lockers here, and I don't need it that much, so I'll leave. I also wanted to get out and see everyone else. I wasn't spending time in the room, and they gave the locker to someone else. It was a step forward. I started to see I wasn't different to anyone else. I just went along, coped with everyone else. Everyone had their own little thing, mine was DCD." (Participant F)

Participant H had an entirely different approach to dealing with his difficulties to any of the other participants. He conceptualised any problems he experienced as being the fault of the teachers. He did not take responsibility for his challenges and did not attempt to problem solve for himself. The following extract typifies Participant H's response to problems:

"I think that I'm getting worse at stuff, at the start of the year I got (*lists the results he got which were all A's*), I'd say I'm averaging 50% now. I think this is cos Em the teachers are getting worse. That's what I think, like my xxx teacher, she's an eejit and she doesn't do anything." (Participant H)

Participants G and K were diagnosed later than the nine participants previously discussed, one having been diagnosed in the last term of sixth class and the other at the end of her first year. They both expressed a feeling of relief that there was a reason why they were experiencing so many problems.

"It's really crazy, because when you read everything you realise, that's why, that's why... all this stuff, it's a great thing, I think, it's kinda like a really good thing, it's not a bad thing, getting diagnosed." (Participant G)

This increased understanding of DCD brought with it a sense of frustration that other students and teachers frequently did not grasp the full ramifications of having DCD and thus did not always accommodate for it.

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“And you know, it’s really hard because you want to – you're willing to do the work, some people just laze around and don’t do it, and then you come in without it, and then people think you just haven’t done it, even though you spent a longer time attempting to learn it, and sometimes you're stressed because you're scared they’re gonna give out to you.” (Participant G)

Feeling misunderstood resulted in Participant K feeling unaccepted by other students and feeling like an outsider.

“In primary school, everyone was just kind of accepting. The worst thing about secondary school was how hard it was socially and of course the homework. I had a huge feeling of being on the outside and that was hard.” (Participant K)

Participant L also expressed feeling like an outsider. He had been bullied in primary school and felt this was happening again.

“I was scared what happened in primary school would happen in secondary school. It’s partly happening, but mostly not with my class, it’s the other classes that are bullying me pretty much.” (Participant L)

He felt misunderstood by his school as he was not being allowed to use his laptop. He felt that this was discrimination and he worried about the impact of this on his grades.

“They’re denying my rights and there’s this one guy that goes on about the laptop. He says, you can write, you don’t have a big blister. And I say, you see there?” (Participant L)

He dealt with his difficulties by believing that everyone with DCD had some kind of special gift to make up for all of the other problems they had. He believed that his was his keen sense of direction.

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“I realised that (names his friend with DCD), he’s really good at certain things, and all the other people, people with Dyspraxia, I realised they have a talent, they’re prodigies. And mine is maps.” (Participant L)

Despite this ‘magical thinking’ Participant L still desired to be like everyone else and to ‘fit in’ with his peers. This desire is typified in following quote where he discusses a time he refrained from answering a question even though he knew the answer:

“Yeah I did, I knew the answer, but I didn’t say because I wanted to be normal.” (Participant L).

The final three participants had the most difficult time adapting to their transition and to the problems they encountered relating to their DCD. Participants C and J had been diagnosed whilst they were in first year and had not yet received resources. Participants C and J reported not fully understanding what DCD was and feeling shocked and confused by the diagnosis.

“I didn’t even know what Dyspraxia was. I knew what Dyslexia was, but I didn’t have that, I’d read a lot. It didn’t seem very likely. I don’t really know what it is that well, but it’s fine like, I don’t really know much about it. I only found out, like... I was surprised to hear what it was. Well, it didn’t seem to make things easier at school... I don’t know, well, none of my friends have DCD or Dyslexia or anything like that, no..... I’m a very clean and tidy sort of person, so no, I didn’t get that actually, yeah. I always seem to be forgetting things, that surprises me. This isn’t just like me pretending or anything, to get away with not doing the homework. I just don’t understand it.” (Participant C)

“I didn’t know I had Dyspraxia, not until recently. I don’t really know how I found out but I got upset about it. I was told that it’s just a reason why (*pauses*) I do some things. I felt like I was the only person. I felt I was on my

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own. I think I've had it a bit tougher than other people, but maybe I just think that. I never felt different than anyone else in primary. I feel different now.”
(Participant J)

Participant J felt very overwhelmed by her diagnosis and by the difficulties she was encountering. She felt that it wasn't safe to be different in any way and that she would be a target for bullying if people know about her differences. She felt stressed, unsure and insecure.

“They judge you on absolutely everything in my school. I feel Intimidated, if I say something in class, they'll be slagging me. I think I found it tougher than other people to leave primary. I wouldn't even have known what dyspraxia was in primary. I didn't feel any different than anyone else in primary. I started to feel different from other people in secondary school. I got lost and the books and everything coming in together. I felt scared, I'd dread Monday but feel better during the week as Friday I'd know I had the weekend off. I'm scared to ask questions in class as I'm afraid of what others might think, I'm afraid they'd laugh. They do that to other people. Most people in our year are mean like that. I wasn't diagnosed till the end of first year, I got no help. I felt singled out and embarrassed in front of everyone. I don't want to be let away with stuff but some stuff maybe. You don't want to stand out in my school. People single people out for stuff..... I wouldn't tell anyone I have Dyspraxia. I don't really know what it is or how to tell them and I'd make the situation awkward.” (Participant J)

Participant C was also keen that other students did not notice her differences and she did not want to receive any help from the school. She insisted that her problems were mild and that there was nothing they could do anyway.

“I don't think there's anything they can do (*the teachers*). It's very mild, I think it could be very mild. Mild, yeah. There's nothing they can do about (*leaves the sentence unfinished*). I think my Mum left a note but, I just have

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22to try to be more organised. I'll be more, I'll try to be more organised.
Well, there's nothing they can do, there's nothing they did, there's nothing
they can do to help, I just have to help myself to be more organised."
(Participant C)

Participant N found the situation so stressful that he frequently became sick and found it difficult to recover.

"I missed a lot of time in my first term. More than I would like to actually. The thing is, if I ever get a bit sick, which happens fairly often, more than most people, nothing crazy. With school, and the classes, and moving between them, your sickness does get worse very quickly. That's happened a few times." (Participant N)

He felt he was constantly making mistakes and he felt disorganised and overwhelmed. He had significant difficulties coping with the transition and his feelings were so intense that he experienced physical symptoms.

"Well, my heart does go faster, and I can kind of, I feel so upset about it and sometimes my body feels kind of, when you feel that kind of worried and almost kind of panicked, you feel it in your body, in an occasional class in most subjects, and all the time in Irish. Well, in English, Woodwork and Technology, the very practical side of things, I'm making a lot of mistakes in them and I'm not doing things properly. I feel upset in a different way in those classes....." (Participant N)

Conclusion

All of the participants found that their DCD related problems were accentuated during their transition to secondary school. Participants reacted in different ways to this experience, with some reacting more adaptively than others. There were indications that participants who had known they had DCD early in primary school, (prior to sixth class at least) responded more positively to the experience than

those with a more recent diagnosis. The exception to this was participant H who was angry and blamed others for his problems and participant L who had difficult external circumstances in that he was being teased by other students and wasn't being allowed to use his laptop and Participant N who had been aware of his condition but who had received no preparation for his transition. The following section will examine the reasons for these differences in responses in more depth.

4.5 Key Constituent of the General Structure - Factors that influenced participants' reactions

There were a myriad of factors that influenced how participants reacted to this heightened awareness of their DCD related difficulties. As has been demonstrated, participants who had been diagnosed before sixth class and thus had a longer length of time to come to terms with having DCD, did, in the main, cope better with their transition than those with a more recent diagnosis. Other factors that influenced their reaction included: their experience of sixth class and of leaving primary school; the preparation undertaken for secondary school and the induction process experienced in secondary school; the accommodations made by the secondary school and experience of teachers; their perceived peer acceptance.

Experience of primary school, preparation for transition and induction.

The three participants who had accepted their difficulties and were happy to receive any help that was available in secondary school had a mixed experience of being in primary school but had all been very well prepared for the transition itself. This may have been because all three had additional diagnoses, Participants B and O with Dyslexia and Participant E with mild learning difficulties (unspecified). Their dual diagnosis may have made their needs more obvious and thus the need for preparation for transitioning a higher priority. Participant O did not remember much about his sixth class apart from the fact that he had gone on some interesting outings but generally felt bored and ready to leave.

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“I was looking forward to it (*going to secondary school*). For learning, I wanted to learn new things. I was getting bored in primary and I was ready to go.” (Participant O)

He was well prepared for his transition and had been given a tour of the school before he started along with a week of induction once he was in secondary school. It also helped that he had attended sports camps at his new school so he was very familiar with the environment.

“Uh, well there was the tour thing that I went on..... It was fine.....Well, I'd already seen the building before it, at a camp I went to there....Oh, yeah and an induction week thing.....we did some stuff, we looked at what the classes were and stuff, I don't remember. It wasn't very interesting.....Yeah, then we went orienteering. We went around, we had to get these stamps from around the field and stuff, it was really boring..... There were these mentors, they were the ones who gave us the tour. They were nice, they were students”. (Participant O)

Participant B had very positive memories of sixth class. She had particularly enjoyed the time she spent with her resource teacher who had seen her with a small group of other students. She had experienced a highly nurturing environment in primary school.

“Well my, em, I used to go out to resource with this lady called xxx, she was really nice and she would bring us places, like so, she'd bring us down to the village and to the shops and once she brought us to the fishmongers and we like got fish and we were trying to name them all and we went back up and we made fish fingers mmm. We also made brownies with her as well and she started a garden with us. We made like plots and we planted stuff from some seeds. One of the plants was peas and carrots and rockets and stuff. They were pretty nice and we made our stir fry thing with them. They grew into really big plants.” (Participant B)

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She had also been well prepared for the transition to secondary school as her resource group had been brought to visit the school and had met the Special Education team there on several occasions.

“Oh yeah (*names her resource teacher*) brought us in a few times in the year to see it, em, and then one of the SNAs in secondary, she met us a few times and she brought us around the school on a tour and we met the resource teachers and we did stuff like that and we'd just go around and talk and xxx one of my resource teachers, we'd have like meetings with her.” (Participant B)

In contrast, Participant E had found her time in sixth class to be a stressful and upsetting experience. She had felt unsupported and overwhelmed.

“Yeah, I felt like, when I was in Sixth Class, I wanna get outta here, wanna go to Secondary School. I didn't really get along with the teacher, I didn't really like her. She wasn't really that nice, when I didn't understand something she would get really mad at me. Yeah, I didn't really like her at all. And, I was struggling there, I couldn't really answer the questions, so I put up my hand to ask her to help me, but she kept on saying 'No, do it yourself.' that's why when it came to the time I wanted to go to Secondary School.” (Participant E)

The preparation given to her by her new secondary school contrasted starkly with her experience of primary school. She met the principal and both Participant E and her mother were given a personal tour of the school along with being able to attend an induction day before school started where she had the opportunity to meet the other students.

“I visited the school before I started there, my Mom brought me, because we have a really nice principal, Mr. xxx, he's really, really nice, he's so kind. And he brought me around the school and I met the sports teacher Mr. yyy, and then we had an Induction Day when we went around the classrooms and

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we also got lunch at the school, it was really good. They left us kind of on our own, to have something to eat, and we sat together and talked to everyone and made friends. We all got to go for a swim and everything.” (Participant E)

The five participants who had accepted that they had DCD but strove, as far as was possible, to deal with the related problems independently all expressed that they felt ready and were looking forward to being in secondary school. Many of them couldn't remember much about primary school.

“I don't remember a lot about sixth class to be honest, em, I remember it being, you know, I don't remember any particularly bad memories from it..... Em , let's see, what do I remember? Em, I felt very ready, mainly because I was reasonably, I was getting a little bored in primary school, so I was very much looking forward to it (*secondary school*).” (Participant A)

“I don't remember that much (*about sixth class*) but what I do remember is that it was quite fun. (Participant D)

This group seemed to be more focused on what secondary school would bring rather than of being particularly mindful what they were doing in primary.

“The summer exams were coming up, but I wasn't really stressed about them, they didn't mean much because I was going into a new school anyway, so yeah. my main thing was going into secondary school” (Participant M)

Participant F had given greater consideration to the move and although he felt ready to go, he was aware of his feelings of loss and of the need to let go.

“It was a bit emotional, a lot of things kind of changed in a few weeks, and I found it harder to meet up with old friends that I had and make time for new friends, and not go back to the same school again. Good times, bad times.

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Yeah. And then the whole idea of this big school, and me being the smallest when I was the biggest in school.” (Participant F)

All five of these participants felt that they had prepared well for the transition, they had attended open days prior to starting school and had met some of the teachers. All had experienced a structured induction period before their regular schedule of classes had begun. Participant I had even attended a group run outside of the school system which was aimed at preparing students with DCD for secondary school.

“I went on this course, kind of a thing, in (*names the place*), it was for preparing you Well, I learnt timetables anyway, like, how the week would look and all that, so, kinda just that sort of thing.” (Participant I)

Participant H, who was the participant who felt that his difficulties in secondary school were the fault of the school system reported that his primary school had not prepared him for secondary school with the exception of telling him that secondary school teachers would not do as much for him as his primary school teachers had.

“They didn’t prepare me at all. Em, they just said stuff like they’re not going to spoon feed you in secondary school and that was about it.” (Participant H)

He felt that he had been labelled as lazy for his whole time at primary and he remained angry about this. This may have contributed to his defensive attitude in secondary school.

“Em cos like the whole way up from junior infants the teachers gave out to me saying you're writing is bad and you're too lazy.” (Participant H)

His secondary school provided a two day induction for the first years which was conducted before the rest of the students returned to school.

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“Eh yeah they had this thing for the first day. I was in from 11 till 1, 11 till 12 30 or something. The first day they showed us our timetable and got us to introduce ourselves to each other and on the second day they showed us around and then on the third day the rest of the school was in with us.”

(Participant H)

Participants G, K and L were in the group of people who reacted to their DCD related difficulties with feelings of alienation and the desire for other people to be more understanding of their difficulties. Participants G and K had not felt ready to leave primary school and neither of them had felt they were prepared for the move when in sixth class.

“I never really, I know this sounds kind of bad, but I never really thought about it (*going to secondary school*) before. I kind of, just like, it's kind of like when you go to secondary school, it's kind of a shock and you don't really think about it until like, the summer holidays. Not like on the first month but maybe the second month of the summer holidays. That's when you really start to realise that, like, going to secondary school. I'd seen my sister doing all the homework and that's when it was like I started to get a bit anxious, but sixth class was more like the worry of leaving your friends and leaving the school, do you know what I mean? Kind of like, I was more a kind of thinking of like, I'm never going to get primary back.” (Participant G)

“I didn't feel they really prepare us for the move (to secondary school). Em, I don't, they gave us summer tests to try and prepare us. Just talked about it, what it would be like. And not to get into trouble, mix with the wrong group.”

(Participant K)

Both participants reported being happy in primary school but Participant G was diagnosed with DCD at the end of sixth class and felt that got in the way of her fully making the best of her final year, she also would have liked more help post-diagnosis.

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“I was diagnosed with Dyspraxia at the very, very, very last minute at the end of sixth class, which was kind of annoying because it was my last year in primary school and I kind of wanted to make it the best year that I could but obviously there was a lot going on at the time. At the end they kind of tried to help me but not majorly, if you know what I mean.” (Participant G)

Participant L had experienced a difficult time in primary school as he had been bullied and ostracised by some of the other people in his class.

“It was about second class to half of fourth class, I just got sick of it. There were only 3 people who would play with me. One person used to bully me, but now we’re friends. We were fighting so much, the principal and my Mum said we needed to sort this out, the principal helped, and we became friends later on. When I was in sixth class, like, people liked me not the highest, but they would say ‘Hi’ and talk a small bit, but not the most. There was still a group, who didn’t want to talk to me. I was scared what happened in primary school would happen in secondary school.” (Participant L)

He had been significantly impacted by his experiences in primary school and commenced secondary school with a dread of being ostracised again. He did not remember being prepared for the transition when in primary school or much about the induction once he arrived to secondary school.

“I don’t remember any induction, the first week in was just work. Well, it was fun for the first week, then it started getting annoying. It was fun until the homework started.” (Participant L)

The only contact Participants G and K had with their secondary school prior to their first day was to attend the entrance exams and both girls experienced a very short induction (one day maximum) and one had even attended regular classes on her very first day.

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“On the first day we had assembly, and then break, and then we were shown where our lockers were, and then I had double Business as my first class..... and then you could go back to your locker or go home, it was a half day. Yeah, and the next day you went straight into classes. You had to sort out yourself the second day. It was a normal day, you had to go into your locker, get your books and go to class..... The sixth years gave us a tour on the first day, but I didn’t remember where everything was. But they didn’t show you every classroom, and you might not have been there. And the people. I don’t like places with loads of people in them for some reason. The sound, and the people.” (Participant K)

“Well, like I kind of knew it (*the secondary school*) because my sister went to the school but I hadn’t really been inside it. It's kind of weird because it looked so much bigger back then. Now it looks small. Em, but on the first day they like showed us around. Classes started on the second day” (Participant G)

These participants were expected to adapt very quickly to their new environment and this contrasted with how much easier things had been for them in primary school.

“Yeah, primary school was so much easier. No complications” (Participant K)

Participants C, J and N had found the new awareness of their DCD related problems in secondary school overwhelming. As with the former group of participants, they also had not received any preparation for transitioning to secondary school.

“Well, um, they didn’t prepare me for going to secondary at all really. Not really. They just kind of taught us things in the same way they had in fifth class or fourth class. No preparation at all. Em, they just said it’s going to be much more difficult, I don’t really remember much else to be honest.” (Participant N)

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Despite the lack of preparation Participant N and C were looking forward to being in secondary school. Participant N had been feeling bored in primary and was keen to move on and Participant C was excited about the new social opportunities that awaiting her.

“I was well, excited to go to secondary school, it was fine like, I liked sixth, I liked primary school, I looked forward to the social part of secondary.”
(Participant C)

Participant J had enjoyed her time in primary school and unlike participants C and N she had not wished to leave it.

“I liked that in primary I only had to learn one teacher’s name and have one teacher to know, so that was OK, and all the subjects were in the one class and all your books were in the one class and you knew everyone in the class. I think I found it tougher than other people to leave primary. I wouldn’t even have known what dyspraxia was in primary. I didn’t feel any different than anyone else in primary. It was all much better and happy. (Participant J)

All three of these participants had also experienced at most a one day induction and then had begun regular classes on the next day. Participant J describes an induction that was arguably not entirely relevant to starting in secondary school.

“That first day was an induction, we went with the leaders, from sixth year, and they helped show us around.....We just went into this meeting, and they just said welcome to the school. Even though we were in first year, they gave us colouring sheets, I don’t know, they were colouring sheets, with word searches and things. Activities. I thought it meant it that secondary school wouldn’t be too hard.....After the first day we went straight into class. We had to find all the classes by ourselves.” (Participant J)

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Participant C had a brief induction where they introduced students to the rules and regulations of the school but they were not shown their locker room as the first years did not get a locker in the first week.

“Induction was more like, like an open night, we talked about rules and stuff. We didn’t get a locker for about, over a week anyway. On the first day I had all my books, and on the second I left some behind.” (Participant C).

Participant N was more content with his induction, despite the fact that they did not get a full tour of the school.

“Yes, I think I remember it vaguely, em, it was a Wednesday, and we just went in, we didn’t really have any lessons, we went in and em, some of the teachers talked to us about what the year ahead was going to be like, we got shown around the school, and we got to meet some of our main teachers, stuff like that. But again, we weren’t shown any of the subject rooms, or the subjects or stuff like that. We spent an hour and a half at the end of the day with our actual own classes, so we didn’t spend any time with the options classes or anything. Talking about how it was going to work during the year. It was a very interesting day. (Participant N)

Participants had mixed experiences of being in primary school with three of them having particular difficulties there. With the exception of the traumatic experiences reported by Participant L, the participants’ general experience of primary school did not impact their ability to cope with their DCD related problems in first year. The preparation that they had undertaken for secondary school and the induction period they had experienced once there did impact them. Participants who had been well prepared and who had a well-structured and comprehensive induction coped better in secondary school than those who had not.

Experience of teachers and accommodations made

Participants' reactions to their DCD related problems were also impacted by the accommodations they received in secondary school and by their experience of teachers in the classroom. Accommodations in this context refer to the use of a laptop, resource hours, learning support and extra time for tasks. The group who accepted their difficulties and were happy to receive any help that was available had a largely positive experience of their teachers and felt that their needs were well accommodated. Their transcripts demonstrated that they were particularly well nurtured by the school in their first year. It was interesting to note that all three of these participants had an Irish exemption and thus had learning support classes in small group settings when other students in their year were in Irish class along with having their individual resource time. It was also interesting to note that each of these participants attended private schools. As previously stipulated, these participants may have been more open to help as they all had additional learning needs. Participant E was very happy with her resource teacher and the help she received from her but would have liked to have been able to use a laptop.

Ms. xxx, she asked us what I would do best, in a group or on my own, and I said on my own, like, I do Maths mainly. She's really nice, she's actually bringing me fishing at the end of term. So em, she colour-coded my copybooks. She like got coloured card and put it on the copybooks, and assigned them to the subjects, so my Geography is white and blue, and then she just put in big capitals 'GEOGRAPHY'.....It would be way better if I could use a laptop. That would make a huge difference! That'd be very helpful if I had the laptop" (Participant E)

Participant B had teachers who had even brought home-baked goods to class or had given the students confectionary based prizes.

Ms xxx. she's really nice She's really kind, like, she'll do quizzes with us, em, and the winners she like gives one of those giant chocolate gold coins, em, she just does fun stuff like that and she lets us watch those geography

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videos and stuff.... I have Mr xxx he is really nice, em, if we get like over a certain percentage in tests he'll like bake stuff. He's made us brownies and cake and muffins and stuff like that. He does games with us and the prize is like a can of Coke or crisps and things and on our last day of school he made us as three layered chocolate cake. (Participant B)

Participant B had been sanctioned for use of a laptop in school and when her resource teacher found that her laptop was too heavy for her to carry she put in an application to the Department of Education for a lighter one.

Well I can use a laptop, but because you have three sets of books and it's just too much. I type exams ... Miss xxx is actually applying me for a netbook and that will be easier in carrying everything, like, even if I just had a tiny bag around me that would be way easier. She lets us use her one sometimes just to like to get used to them and it's OK it's just a bit tighter together (*the keys on the keyboard*). (Participant B)

Participant O's school had arranged a weekly schedule of learning support classes for him and he found these and his resource time enjoyable, helpful and relaxing.

"On the Monday I get extra Science, which is fun, because I get to talk about warp drive, and other geeky things. Then on Tuesday, I have English, which is very helpful, because it helps with all the spelling rules that I don't remember very well. On the Thursday, is, I just have a one-to-one with a teacher. We just chat, and she helps me with any problems I've had during the week, figuring out the times of matches, and music and when things start. Yeah, it's relaxing to have that time. Friday I have extra Spanish which helps me." (Participant O)

He also felt that he was well accommodated for at the entrance exams and appreciated the fact that students with differing needs had a separate room from the rest of their year in which to do their exams.

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“Well, I was in a different room from everyone else because I was using the laptop There was good ventilation, plenty of windows, there weren’t loads of other people, it wasn’t hot, em, it was a lot calmer in there, they were less strict. They were friendlier. “ (Participant O)

The group of participants accepted that they had DCD but strove, as far as was possible, to deal with the related problems independently of any help the school could provide also had generally good experiences of accommodations and teachers. Participant I was particularly reluctant to be treated any differently to other students and as a result he did not receive any allowances for forgetting things or for being disorganised, his Year Head would have been willing to take the resulting ‘demerits’ away but the participant refused this as he did not want others to know. He was adamant that he wanted to be treated the same as the other students.

“I’m still getting demerits and stuff for forgetting stuff and being late, I never get one for anything else, but I still have the biggest demerit counts of everyone. And there are some people who get it all for messing in class and being late, and I’d be late for class sometimes, because I wouldn’t know where to be going.....Sometimes your Year Head would talk to you and she’d look at your merits and demerits. Oh, you know, it was kinda, ‘what do you think we can kind of do to help you?’ But if she took the demerits away, well everyone would know...” (Participant I)

He also made the choice to not use his laptop for school and to handwrite everything.

“I don’t use the laptop. I had the choice, but I don’t want to, I’d be embarrassed, no-one else is using it. Yeah, they’d be saying ‘why do you get a laptop and we don’t’. I used it in primary but I didn’t bring it in first year, I’d

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have arguments with my mother she thought I should be using it.”

(Participant I)

Participants A and D did not use laptops and they both felt that they did not need any accommodations in school. “I don’t feel any extra help was needed” (Participant D). Participant A’s school had a policy of allowing the students to sample all of the subjects before choosing their options, this allowed him to choose subjects that matched his skill set and thus somewhat negated the need for extra help.

“I planned to do Home Ec and Music and having done Home Ec I realised it wasn't the subject for me So I did business instead, which was much more within my skills” (Participant A)

He felt that the only area in which he needed help was in sport and that he would neither benefit from help in this area nor be motivated to accept any help if it were offered.

“I don't think a lot of stuff could have helped me that well though, cos it's really just, sport, I'm not good at sports, so I don't know if there could have been anything that would have helped me for that..... I suppose it just feels like, it makes me feel that the subject is worthless” (Participant A)

Participant F had been very well accommodated for, as previously demonstrated, he had a space in a shared locker room for students with additional needs along with a locker in the main locker room. He had availed of resource hours and he was aware that teachers tended to accommodate for him if he forgot something or was late.

“I felt some people, my teachers were a bit more forgiving, and I have the resource when I needed it.” (Participant F)

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He also appreciated the fact that he had been given two sets of books as part of a rental scheme provided by school, which meant that he could leave a set at home and not have to remember what to bring home each evening. It also meant that he did not have to carry as much to and from school.

“I have two sets of books, so I just need to bring back hardbacks or copies to write in, and then I have all the books here. I’m on a book rental scheme, borrow the books at the start of the year and then give them back when you’re done. So I just ordered two sets instead of one.” (Participant F)

His school encouraged him to be self-directed, in that they provided him with a wide range of resources but also afforded him the opportunity to let go of them when he felt ready.

“They were there in case I needed them, but I didn’t after a while, I decided I didn’t need the help as much as the other kids.” (Participant F)

Participant M also had a good experience of his teachers and of being accommodated as much as he wanted to be in school. He chose to use his laptop but decided not to take the resource hours as he did not want to miss any class time and did not feel they would benefit him.

“I had resource hours in primary, but not in secondary school. I didn’t really need them, they interrupt class time.” (Participant M)

His school had not accommodated his use of the laptop for exams very well but the participant was being proactive in trying to resolve this matter. He was not overly perturbed about this situation as he felt it would be resolved in time.

“I was in the same classroom as everyone else. Yeah. At one point I was at the top of the classroom, and it’s kind of hard to block your screen.....They couldn’t print my exams out so I wanted to email them. Some exams I just

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did by hand, because it wasn't worth the hassle. I try handing up memory sticks, a lot of my memory sticks went missing around exam time.... I think every teacher should have a memory stick, and then we just give them their memory stick back. I'd be doing three exams a day, I'd only give one of them up on a memory stick and email the rest.... Well one time my email stopped working and for one of the teachers I had the wrong email. My school email wouldn't work, and I had to rely on my own email. Well, I said it would be easier to email it than give everyone a memory stick, which I would spend days chasing down from one teacher." (Participant M)

Participant H was the participant who felt that his difficulties were the fault of the school and who felt he was not being provided with enough help. He predominantly expressed feelings of anger and frustration about the way he felt his teachers' had responded to his needs.

"I got one (*a laptop*) off the Department of education at the start of the year. It was approved, but nobody in the school went to get it Em the teachers are getting worse. That's what I think, like, my maths teacher's an eejit and she doesn't do anything and like em she just says write this down and no one in the whole class can do it. My geography teacher isn't helping me and em , history and science the teachers are helping me and English and French the teachers don't do anything. Irish helps me science helps me. The teachers who don't help me should stop teaching.... The teachers should also let me use my laptop and eh bother to look at my homework and take it up. Instead of saying I can't do this and I can't do that." (Participant H)

He did acknowledge some of the things teachers had done to support him but overall his impression was a negative one. The following extract typifies some of the things his teachers were doing for him. This incident occurred after the participant had lost his journal.

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“I went in yesterday to buy one and I went down to my year head and I came back up to my tutor and he said there were none and he’d take my name for me and if he could find a spare Journal off anyone he would give it to me but then eh my resource teacher said ‘ah here, get your money back off them’ and she gave me her journal. There were a few pages written on so she just pulled these out and then gave me her journal.” (Participant H)

He stated that he was not allowed to use his laptop in one of his classes and he was unclear as to how he was meant to hand up his homework in most of his classes as there was no consistent system.

“Like I say, eh, they say ‘have you got the homework’ and I say ‘can I give it to you on a USB stick’ and they say ‘no I want you to print it out’, but our printer doesn't work so and then they start saying, and like, it would be on the laptop, and they won’t come down and look at it and start giving out and they say you have to do it and all.” (Participant H)

He was, however, well accommodated for when he sat exams as there was a separate room for students who were laptop users or who needed extra help.

“She asked me if I'd like to go down with the others, the people who needed extra help with things like the reading of the questions and I said yeah I'd like to go there. Then I just typed it out there”. (Participant H)

The fourth group consisted of the participants whose experience of their DCD related problems engendered a feeling of being an outsider and who wanted an increased level of understanding from others. Two of these participants used laptops and they both reported difficulties relating using them in school. As has been demonstrated, participant L was very frustrated as he was unable to demonstrate his abilities through the medium of handwriting and was not allowed use his sanctioned laptop in school. Participant G was also confronted with barriers in that her school did not have a separate exam room or any provision for laptop

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users sitting exams. They also did not have a consistent system in which she could hand up her homework but she overcame this by devising a system of her own.

“Em , I have sorted out for my homework because I have a printer upstairs. My homework, I just print it off put it in a folder and give it to the teacher they'll correct it and then I can put it in my big folder with all my, like, subjects and everything so I can keep a record of it. The only debate now is the tests and how I'm going to print that off and give it to them, so we haven't really sorted that out yet and we are trying to get it sorted, they're trying to connect it to the network. There's all sorts of things going on. I heard there was a girl before me who used a laptop but that she left.” (Participant G)

She felt that her teachers didn't did not understand her needs fully and she had organised for her mother to go in and explain things to them.

“Em it would help would be if teachers would understand completely. I have this one teacher and like my Mam has had to come in. My Mam comes in when I have difficulties with the teachers She went on in and she told the teachers and some of them, like, said 'oh I didn't know what that is' or 'that's only to do with coordination'. They only got a piece of paper saying that she needs to use a laptop and that she has dyspraxia and the only thought was to do with coordination, so I think, like, the teachers need to know more about it. I think even now, some of them don't know everything about it”
(Participant G)

She did however find her resource hours helpful but found it difficult to miss out on what was happening in class when she was gone and felt that is was difficult to catch up with material she had missed.

“My resource teacher always says to just make sure, like, you get the homework off someone, but that's not really it you know, and we like, we had a big Christmas test coming up and I only found out about it the day before

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because I wasn't in for the class, so I had to try to study for the whole test the night before.” (Participant G)

Participant K was not diagnosed till the end of her first year and thus her school would not have been aware of her DCD and could not have accommodated for it. She had been aware of all of her difficulties and did not have a reason for them, in her own words: “It was a stressful year.” (Participant K). Her teachers did not understand why her writing was so poor and why she was so slow at completing written work in exams.

“I'm slow, (*at handwriting*) and teachers don't understand it some of the time. Yeah, I don't write my c's properly, or my i's. I don't cross my Ts, don't put full stops or commas. Yeah, they just want me to change it. They say they can't read it. I get slower, if I'm writing a lot, as it goes. Em, I'm just not getting it written in time, and my pens would be exploding, ink everywhere, because I lean so hard. Yeah, and in the summer exam, I found that my arms would be sore, as the exams go on. (Participant K)

Participants C, J and N formed the group that consisted of the participants who had found their situation difficult to accept and were overwhelmed by their problems. Participant N was the only one of these participants who used a laptop. Participants C and J had only been diagnosed with DCD in first year and thus they would not have been eligible for resource hours until the following year and their teachers would not have been aware of the cause of their difficulties and would not have been in a position to accommodate for them.

Participant J had found it very difficult to cope with secondary school, she felt intimidated by the teachers and felt that some teachers did not like her.

“I absolutely hate it (*names a subject*). My teacher doesn't like me. If you're ever late she'd give out to you. I don't know if she knows now that I've Dyspraxia, but I don't know if she'd care. She just gives out and shouts at me

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in front of the class. Yeah, I used to get upset about it, saying stuff in front of everyone to embarrass you and put you out in front of other people.

Teachers thought I was doing it on purpose (*coming late*). I think they might think I'm trying to get away with it still, even though I have Dyspraxia.

She thought that some teachers were primarily interested in the more academically able students and that she was not given the same attention that they were. Her perception was that the school did not treat all students equally, was not well organised and used humiliation as a tactic to improve class behaviour.

"I didn't like business because I didn't like the teacher, if you're not clever she just like pushes you aside and she doesn't care. She just picks the ones who are really clever to do the questions and that sort of stuff. I feel put to the side..... I don't think the system in the school is very good, they don't treat everyone the same. It's like when the teachers push you aside the students won't think much of you either..... Everything was laid out wrong, I wish they'd made it easier. I wish they'd been nicer. If you asked something or if you forgot something they'd literally shout at you and make sure everyone else knows that you're in the wrong and point you out. I felt singled out and embarrassed in front of everyone. I don't want to be let away with stuff but some stuff maybe." (Participant J)

Participant C had found it both upsetting and confusing to receive a diagnosis of DCD, she was struggling to cope with the increased demands of secondary school and yet she was keen not to appear as being any different to her peers and thus was reluctant to accept any help that might be offered.

"I don't think there's anything they (*the teachers*) can do. It's very mild, I think it could be very mild. Mild, yeah. There's nothing they can do about. I think my Mum left a note but, I just have to try to be more organised. I'll be more, I'll try to be more organised. (Participant C)

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She did not feel particularly able at school and was more focused on her social life. She had already begun to participate in avoidance behaviours such as skipping classes she found difficult and talking through lessons. She seemed to have already disengaged from the academic side of school.

“I remember when I started first year, hated Irish, mitched Irish and got in trouble. I got in a lot of trouble. It only gets detention, I get a lot of detentions. It’s just talking in class and stuff like that. It’s just like the homework thing, talking in class or, stuff like that.” (Participant C)

She had limited regard for many of her teachers and perceived some of them as unfit to teach or as uninterested in teaching. The only class she seemed to concentrate in was her maths class as she was intimidated by this teacher.

“I don’t think she should be really a teacher any more, cuz she’s deaf, she’s always been like that, she’s too old now at this stage and she forgets stuff. But my maths teacher I wouldn’t really have dared to mess in her class, because my teacher was scary. She was pregnant as well, so... One of our teachers is a bit, um, lazy. He plays on his computer during class time.” (Participant C).

Participant N received resource hours and learning support in school but he did not feel he benefitted from this. He was, however, very relieved to have a break from his other classes and a time to relax.

“Well, that’s just kind of a filler. Em, well instead of doing PE, it’s a double every week, so I go for extra English for half of it, but that’s just the thing people go to if they can’t do Irish and things like that, so it’s not like a resource or anything like that. Em, I do actually see someone on a one to one, in another class that goes in the second half of PE. Yeah, just once a week for one class, and a lot of the time she’s been out for two classes in a row, and I was out for two Tuesdays in a row. It’s a bit boring, but it’s much

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better than PE, and at this time, if I had a class that was boring, I'd much, much prefer that to not knowing what's going on. You get so stressed when you don't know what's going on, you worry about what's going to happen in class. So nowadays I'm kind of grateful for a boring class when I know what's going on. Once a week, I know what's going on in that class all the time, it's very, very boring, but I have so many classes now, you're kind of on edge all the time, you're glad of a boring class." (Participant N)

He had received an exemption from PE on the grounds of having both DCD and asthma. He started using his laptop at the end of September, he had different systems for handing up his homework and often found that teachers were happy just to look at it on the screen.

"I ask them what way they want the homework, and sometimes I print it off, I have some of my teachers' emails, so I sometimes email it to them. Other times I sometimes, more rarely they need to see the work, we do a lot of self-correcting, and the teacher comes around in class and looks at everybody's work, she can look at mine the same way she can everyone else's." (Participant N)

The school did not facilitate him to use his laptop for exams and this was frustrating for him.

"It's kind of annoying, when you're used to using a computer, then the, it sets you back quite a lot to just be writing. Well, we just did tests in the different subjects, but for almost all subjects I would type everything else out (*in class*), I would just write the test. Almost all of them..... Yeah, especially when my main subjects: English; History; Geography; Irish almost exclusively I use a computer. So when for one of the most main subjects that I have almost every day, five times a week, when you have to use writing for it, it's very, very annoying." (Participant N)

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Participants whose needs were accommodated for and who perceived themselves as being well supported by teachers, unsurprisingly coped better when dealing with the challenges they confronted by having DCD, than those who did not. Some students choose not to take the accommodations on offer, but when this was their own choice, it largely engendered a sense of control and of self-direction. Some schools appeared to have considerable difficulty adapting to students who used laptops and this was particularly frustrating for the participants when it came to demonstrating their potential in exams.

Friendships and perceived peer acceptance

Participants had a varying degree of peer support and friendship in secondary school. The degree to which the participants cared about wider peer acceptance varied and in the main the girls seem to care much more than the boys. However the girls in the first group, that is, the group that accepted their difficulties and were happy to receive any help that was available were the exception to this. This group were aware of being different from the majority of their peers and were willing to accept the help and / or accommodations they needed, even though this made these differences more apparent.

Participant B was particularly resilient, she had made some good friends and was unconcerned about what other people thought of her use of a laptop or attendance to learning support classes. She found it annoying that students asked her about her accommodations but she did not feel intimidated by them nor did it make her reluctant to take up the things she needed.

“It was sometimes kind of annoying when people asked why don't you do like Spanish or Irish whatever, it didn't happen a lot, but it's just kind of annoying. When people ask I just say 'I have like dyslexia and dyspraxia' and they understand and they're really nice about it. Yeah, but it's just kind of annoying explaining though what it is and, like, what its effects..... No-one ever teases me, they'd be afraid if they did, that's, yes, pretty much it.” (Participant B)

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She had made close friends and she had no trouble asking them for help when she needed it. She was particularly pleased with her new levels of independence in that she was now allowed to go to a local shopping mall to meet with a friend.

“One of my friends will bring some out of my books if I can’t manage. Yeah, and one of my best friends, she’s in a locker beside me, which is nice, and we go to you know (*names a shopping mall*) up there we go there quite a lot.”
(Participant B)

The members of this group were also quite happy to accept the differences in others too.

“Well there’s this girl xxx and, em, she needs a bit of help in the morning because she is not able to use one arm so she’d (*the special needs assistance*) come in usually and help her put her books in her bag, cos she’s not able to carry them, and then, em, she’d like, see if we had our stuff then then she’d give xxx the key to the lift because she finds it hard to walk up the stairs because one leg’s shorter than the other, so em, sometimes I get to ride up with her.” (Participant B)

“I’ve noticed – there’s xxx in first year, I’m getting along with her. She, this girl, she’s in a wheelchair” (Participant E).

Participant E had, however, not managed the transition to peer friendships in secondary school and her friends were the younger children in her neighbourhood with whom she played the same games as she would have played when in primary.

“I want to go out and play with the girls next door. We make movies, with iMovie on the laptop, I don’t really like wearing high heels, but we’d play dress-up sometimes, we’d dress up in high heels, and we’d go out and pretend we’re going shopping. They’re quite younger than me, but they’re really fun, xxx is 11, and xxx is 9. But they’re really fun like. My Mum says

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they're a bit young for you, but we always have great craic, they're always over here." Participant E

She felt that she had quite a few friends but hadn't formed any close friendships at school and there was no-one from her school that she socialised with out of school hours. She felt that she did not get along with the majority of her peers as there was a group of students who were engaged in bullying behaviour such as calling her names and excluding her. During the interview she discussed this bullying very factually and did not appear upset, she did state that it had upset her on occasion though.

"I have quite a few friends, but not very much, I don't get along with most of them, coz, they keep calling me names and stuff. I just ignore them. But I have like, four or five friends in school."

"Can you tell me more about this?"

It sometimes upset me. I have a couple of nice friends though. In fact, one lives just down the road, in xxx, (*names the friend*), she's in school with me, and she's really nice. We don't hang out after school. I've been really busy with (*names a play that she has been part of*), you see. I haven't really got time to do anything... We hang around and talk at lunch, where everyone sits in the (*gives name of their break room in school*)." (Participant E)

Participant O was very content with the number of friends he had made. His school had organised the locker room so that there was a row of lockers that the students with different needs used. It appeared as though his school had subtly arranged this so that these students were all together while being interspersed with a few of their more typical peers.

"I just chat with my friends during lunch. I made friends reasonably quickly. Most of my friends ended up being quite near my locker. Yeah, I got one of the better lockers. Let me see, I have one of them, and xxx, who also does resource has one. And xxx has resource time and he has one. And xxx, I think

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he has resource time as well. But I don't think xxx has resource and he has one. I think it's (*the better lockers*) probably for the people who require help with organisation, that's the idea." (Participant O)

As has been previously demonstrated Participant O was very comfortable with being different. He was, in fact, more concerned about what he thought of others than of what they thought of him.

"Yeah, most people in my class, I don't really like them, they're noisy and annoying. They just mess around and chat, it's quite annoying. They're quite mean to student teachers. I would sometimes get a headache." (Participant O)

The group of participants who accepted that they had DCD but strove, as far as was possible, to deal with the related problems independently of any help from the school had varying reactions to peer acceptance. This group was formed exclusively by male participants.

Participant A had not had many friends in primary school and did not seem perturbed by this. He became lonely in secondary school and started to make close friendships there.

"I remember I didn't have a lot of social interaction (*in primary school*), not as much as I have now Well ah I suppose I spent a lot of time in the library (*at lunch breaks in secondary*) eh. Thinking back, I only really got close to my friends later on, a little bit in the year. So I had lunch on my own. Generally I had packed lunches in the locker room In ways, it was kind of lonely." (Participant A)

Peer acceptance did not appear to be particularly important to this participant but he did value his independence and did not like asking for, or, receiving help. He did not feel in anyway judged by his peers as a consequence of having DCD.

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“I don't think I got particularly judged by my peers which was nice. Asking someone else (*for help*) was a bit awkward because it felt like ‘sorry you have to do this’. I don't like having to put other people out. I don't like having to ask other people to do stuff for me cos it feels like I'm wasting their time.”

(Participant A)

Participant D also valued his independence and did not like to receive help. He had a pronounced speech and language disorder and thus his differences were arguably even more obvious than that of the other participants but this did not overly concern him. He had made friends with other students with shared interests i.e. computers and books, and was content in his own circle.

“I had some friends from my old school and I made a couple of new friends. Em, I mostly meet them now at the library in school. There are old computers there. I'd just really go off and do my own thing, or I'd more hang out with other people, em, maybe just walk around or go to the library”. (Participant D)

Participant I (as has been demonstrated) cared deeply about peer acceptance and his chief motivation for not accepting help was that he did not want to be perceived as different to his peers. He had worried about making friends in secondary school but he had actually managed to do well in this area and had found that he had no difficulties forming friendships despite having come from a very small rural school and thus not being used to a larger school environment.

“Leaving sixth class I was nervous about making friends and things like that. Yeah, but it's simple once you get in (*to secondary school*), you just start talking to people and then you talk to more people, and it's grand..... I've always had no bother making friends. I've made friends with people who are kind of shy.... it just sort of happened that way, they're sound anyway.”

(Participant I).

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He had clear personal boundaries and only told his closest friends that he had DCD as he felt they would need to know as he sometimes knocked things over when visiting people's houses.

"I've told some of my closest friends (*about having DCD*). They get it. Yeah, and like, everyone has something. I'd just kind of say it in a way, if I messed up, in their house, and I'd just tell them." (Participant I)

Peer acceptance and friendships were also important to Participant F. In common with participant I, his chief worry when transitioning to secondary school was also about making friends. He was keen to find a group of students he could belong to.

"I found that once I fit in, that's what I was worried about, it's fine.... At the start I was nervous, because it was just me and one of my other friends, so I had to adapt and make new friends, which sometimes I'm not very good at, and it took a while." (Participant F)

He made a conscious decision to make friends with students outside of the locker room allocated to the students with additional needs. He gradually moved away from the Special Education resources into the main stream of the school.

"I just, all my friends were out, and I thought I'd spend more time with them, and I thought I'd learn better without someone helping me. I'd become more self-sufficient." (Participant F)

Even though Participant F had a close group of friends he still had to deal with other students harassing him because he had initially used the locker room for students with special needs. He found this difficult to cope with in the beginning but became more resilient and less reliant on peer acceptance as the year progressed.

"I made one close friend in school in the first few weeks, and their friends became my friends, and I had a group then. Just that there's always someone

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who will try to get on your nerves, upset you, there's always gonna be one or two, with mental insults. Not physical, because I'm a big guy. But there was always one or two and they get the stab in. Like '(says his name), you're stupid' but it wasn't that blunt, but if I did something small. But you have your faults, so I'm not going to give into it. I coped, and now they don't insult me anymore, because there's nothing to insult. At the start it was tough, because at the start I felt a bit different, but I learnt to cope with the DCD.... Now it's just no skin off my nose. People can say what they want, it's not going to change me. Someone saying something to me, unless it's constructive, won't, unless some who I care is making a constructive comment, I won't. It's normally not someone I'd want to hang out with anyway. I was like, why would I want to talk to that person if I know what they're going to say. I have my own group of friends, I can get on just fine without them. There's always going to be someone, you need to learn how to cope with it." (Participant F)

Participant M had transitioned from a primary school that was a feeder for his new secondary school and thus many of his old friends went with him. His decision to refuse some of the accommodations offered to him, such as resource hours, was on the grounds of not feeling the need for them as opposed to any concern about being perceived as different by his peers. He had no difficulty asserting himself nor did he mind other students knowing that he had DCD.

"Yeah, but I don't make it all that known that I have dyspraxia, I just get on with it. As it happens, I was writing something on the board in French, it was a challenge. And someone said 'write faster!', and I finished and turned and said 'as I've said before, I'm Dyspraxic, so I can't write as fast as you.' He said 'We all know you have Dyspraxia.', and I said 'obviously not, because you told me to write faster!' (Participant M)

He felt that he may have alienated some of his peers at the beginning of first year but perceived himself to have matured through the course of the year and to have developed friendships beyond the group he was initially most comfortable with. It

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is interesting to note that he doesn't apportion blame on the peers who his perceives did not like him but rather accepts the role that each side played in the interaction.

"I guess, I didn't think people liked me as well, but a lot of people didn't, I didn't really fit in in school. Apart from my group that I do fit in with. The rest, I kind of alienated myself from them, but, I kind of became friends with them towards the end of the year. I kind of matured a lot, over the course of first year. I guess they matured as well." (Participant M)

Participant H who was the participant who felt his difficulties were the fault of the school who he perceived as not providing him with enough help had made a lot of new friends.

"I went in with a ton of friends and then I made a ton of new friends as well" (Participant H)

Peer acceptance was very important to him and he refused resources such as a locker and use of a laptop when in main exam hall because he did not want the year ahead of him to know about his differences.

"For the for the Christmas exams. I did the first two on the laptop and then what they do is they put you in with the second years, and I didn't like that because I didn't want the second years asking me what I was doing with the laptop and I just ehh didn't do it and for the last 2 exams... Em, coz my bag was really heavy at the start of the year my mam got me a locker before everyone else because they only got their lockers after eight weeks so she eh gave me a locker but it was beside all the second years so I didn't like using it." (Participant H)

He found it uncomfortable to have to deal with questions as to why he needed to use a laptop and he tended to ignore such questions. He did not even tell his

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friends about his DCD but rather invented a story as to why he needed to use a laptop

“Everyone asked me (*Why he uses a laptop*) but I just looked ahead and I pretended I didn't hear them. Well, I would have said it to my friends but no one else. Em, like a lot of them were in my class the whole way up so eh, my handwriting was bad and it was really bad, and I told them there was something wrong with my hands and that's why they gave it to me.”

(Participant H)

The three participants who felt like outsiders and wished that other people would understand their difficulties often felt that they did not have peer acceptance. They tended to feel alienated and found it hard to make friends. As has been discussed Participant L had been bullied in primary school and had been fearful of the same thing occurring in secondary school. He frequently felt threatened by other students and he was so nervous on his first day that he was physically sick.

“On the first day I was embarrassed as hell, because I kept getting sick with nerves. They were laughing at me, because we were all sitting together having lunch, and everyone was coming in and I asked to go to the bathroom, they asked me ‘How many times do you have to go to the bathroom?’ I missed half the first class because I was crying with the sickness. Well, it was being bullied and all that and because I had no friends.” (Participant L)

It is possible that he may have even misinterpreted the actions of others because of his experiences in primary school. The following extract describes him feeling that others were not letting him into his locker when, they may in fact, have been merely trying to access their own.

“The person to my left and the person under me wouldn't allow me to get to my locker. The person to the left of me would have his locker open, and it

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would be nearly full, and he would be leaning over, and the person under me, when I open my locker it hit him in the head.” (Participant L)

The participant had made friends with another student with DCD however, and found this student to be a source of support and encouragement.

“When I was having issues with whether to choose Business or Music. With my Dyspraxia it’s going to get hard, with the hearing and he writing fast, then he (*his friend with DCD*) said to me, if I can do it, you can do it, because I have Dyspraxia. Well, I sort of know he had Dyspraxia because of PE, he’s not the best at football. ... Yes, whenever I have a problem with my Dyspraxia, I go to him.” (Participant L)

Participant K had made some friends initially but felt that they had become bored with her and had ended the friendship. She felt very isolated and different from the other students and longed for a friend and peer acceptance.

“I had a group of friends but they lost interest in me. They knew they could always tell me what to do, and I didn’t know how to handle that. Lost contact with them. I still see them in school, not like it was. Having to make friends, that would probably be the hardest thing. Well, at the beginning everyone was kind of friends with everyone. And then it was groups. It’s hard, because it was like, where do you go? Some changed. Others were always the way they were. But em, there was a lot of judging, people talking about people, and you don’t want to be a part of it. Yeah, it’s especially bad in an all girls’ school.” (Participant K)

Participant G used a laptop and wore Irlen lenses and felt these things made her stand out. She felt that other students thought she was odd and she strived to help them understand her differences and even gave a presentation to her class about DCD.

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“It's not hard for me for tell people about my Dyspraxia. It's hard for them to understand, but the other day I asked my CSPE teacher if I could, like, because we do different things on different disabilities and stuff like that. So I asked if I could talk to my class about dyspraxia, so I could finally tell them what it was. So I took 10 min of the class and I just told them. I just pretty much told them, like, I have this Dyspraxia leaflet from, like, the Dyspraxia Association so I could look it up and remember everything and kind of put it into my own words, just tell them what it was and that was why I was using my laptop. It's like learning difficulty but I'm not dumb. It doesn't mean I'm dumb just things like, you know, like coordination problems just, it's pretty, what it is. I hope they got it, like, most of my really good friends (*referring to her friends outside school*) probably have finally got it, but maybe some of them were daydreaming! They probably won't need to ask me (about my laptop and glasses) now.” (Participant G)

She tried to inform as many people as she could about DCD but found there were mixed responses.

“They say, like, why do you use a laptop? I pretty much don't mind telling anyone that I have dyspraxia. The only problem is that when I tell them I have dyspraxia, they like, say, oh dyslexia? And I'm, like, no it's not dyslexia and then someone's like 'dyslexia is like when you don't do this or you can't do that' and I'm like 'no it's not, dyslexia' or some of them, like, I remember this one time when I told this girl and I said, 'do you understand?' and she was like slowly moving away from me. She was like 'oh yeah, yeah' and she kept walking away. She definitely didn't know what I was talking about. It was like, pretty much like, she must think I'm a weirdo now.” (Participant G)

She did, however, feel she'd made a lot of friends as the year progressed but still experienced social anxiety.

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“Well, I was really shy, so the first time I was really scared, being in a new school with loads of new people, it’s really weird. I can hear someone walking behind me, I can’t breathe, you know what I mean? I hate talking to new people. I actually have made a lot of friends, but I still get really shy sometimes. You know, there’s a lot of good people in that class. And you’re constantly – I like the change of classes but it’s hard when there’s people everywhere. I’m really shy.” (Participant G)

The remaining group were the three participants found their situation difficult to accept and were overwhelmed by their problems. They each had a different experience of peer acceptance with Participant C being very focused on her peers and on ‘fitting in’, Participant J feeling judged and intimidated and Participant N feeling so overwhelmed that he did not seem as aware of his peer group as the other two participants in this group.

Part of the reason Participant C found it so difficult to accept her diagnosis of DCD was that she did not want to be different from her friends and she felt that they did not have any problems like hers, it was also difficult for her as she felt that she was less academically able her friends.

“A lot of my friends, they’re like average. Like average, they wouldn’t have any problems or anything, I wouldn’t be like as smart as any of them.”
(Participant C)

She presented as being highly extraverted with a wide range of friends and a keen desire to make even more.

“Two of my friends were going, (*to her secondary school*) and all that. Girls, who have other friends who are going, more people together... No-one of my friends are in my class, but I didn’t mine as I wanted to get new friends as well.” (Participant C)

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She was very focused on her image and this included concerns about her weight, (she was a slim girl) and the weight of her friends, along with her make-up. This need for acceptance on the grounds of physical attractiveness may also have impacted her ability to accept her DCD.

“I eat a lot of food. My friend doesn’t put on any weight, she’s like my brother. She’s not a twig, she just doesn’t put on any weight whatsoever. Not like my other friends, but none of them are fat, or chubby, they put on weight though if they don’t watch it. We go to discos on a Friday..... We’ll put on our make-up, my Dad calls it war paint. I don’t have that much freckles, do I? I have like a few... A few biggish ones, probably covered in make-up. I don’t know, well, none of my friends have DCD or Dyslexia or anything like that, no.” (Participant C)

Participant J felt that it wasn’t safe to be perceived as being different in secondary school, she had observed that other students targeted people who were different and bullied them and she was fearful of being targeted herself. She felt that other students were very judgemental in general and that there was an atmosphere of back-biting and gossiping at her school.

“You don’t want to stand out in my school. People single people out for stuff. I’m not in a group that’s singled out but people can be singled out on their own. People on their own are singled out..... I wouldn’t tell anyone I have Dyspraxia. I don’t really know what it is or how to tell them and I’d make the situation awkward..... I felt that people were judging you on what you ate as well. They judge you on absolutely everything in my school. It’s mostly the girls. A lot of people would think you were weird if you eat healthy, but I ate healthy, so... They wouldn’t say it to you, but just behind your back.”

She worried a great deal about how to stay hidden from particular groups of girls and liked to remain in the perceived safety of her own small group of friends.

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“I’m scared to ask questions in class as I’m afraid of what others might think, I’m afraid they’d laugh. They do that to other people. Most people in our year are mean like that. They haven’t been mean to me. If you say ‘stop’ and ‘don’t do that’ they’d start at you. There’s always a group of girls like that in school. The messers are the popular group who are mean. I stay out of their way. The lads in school just like to joke about stuff but will the girls it’s all much more serious. I have a group of friends I felt safe with” (Participant J)

Participant N had been excited at the prospect of making new friends when he transitioned from primary school to secondary school and was disappointed that thus far he had not managed to do so. He felt that he had a bad start to his first year and that this would impact other students’ perceptions of him going forward.

“It’s just, everything you do at the start of the year is so, it’s kind of key moments, any slight mistakes you make at the start just become more and more exaggerated as the year goes on.... I’m happy with the amount of friends I have, it’s just from primary school through to secondary school, the first impressions you make of people never changes. If someone didn’t like me at the start of the year, they will probably not like me in sixth year.... It kind of annoyed me that if I became friends with somebody, they were the people that I would be friends with until the end of the year. My main friends were the same friends I had last year (*in primary*), I didn’t really like that I had to have the same friends, I would have liked to get to know new people.”
(Participant N)

Participants varied in their need for peer acceptance. Those that were more conscious of being accepted by their peers and not being perceived as being different from them coped less well with their transition than those who were less conscious. The exception to this was Participant I who, although, very keen not to appear different to his peers, coped comparatively well with his DCD difficulties being accentuated.

4.6 Conclusion

The general structure that emerged from these findings was that the participants found that transitioning from primary school to secondary school accentuated their DCD related difficulties making them more aware of that having the condition. The majority of these difficulties were caused by their problems with motor coordination and with memory, organisation, planning and prioritising.

A key constituent of this 'general structure' was that participants reacted in different ways to this heightened awareness. Three of the participants accepted their difficulties and were happy to receive any help that was available. Five participants accepted that they had DCD but strove, as far as was possible, to deal with the related problems as independently as possible. One of the participants reacted by blaming his school for any problems he encountered. Three participants reacted with a feeling of being on the outside. These participants wanted other people to have a greater understanding of their condition. They found that knowing that they had DCD helped them, as it provided a rationale for the difficulties they were having. The three remaining participants found their situation difficult to accept and were overwhelmed by their problems.

The final key-constituent of the general structure entailed the factors that influenced how the participants had reacted to their DCD related difficulties being highlighted. There were indications that participants who had known they had DCD early in primary school, (prior to sixth class), responded more positively to the experience than those with a more recent diagnosis. The experience of primary school did not have a significant impact on their transition for the majority of the participants, but the preparation that was done there and the induction conducted by the secondary school did. Unsurprisingly, participants whose needs were accommodated for and who perceived themselves as being well supported by teachers, coped better when dealing with the challenges they confronted by having DCD, then those who did not. Participants also coped better when they were given the choice about taking up accommodations. The degree to which the participants

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cared about wider peer acceptance impacted their ability to cope with their DCD related problems being accentuated. The following chapter will present a discussion of these findings in relation to the literature reviewed for this thesis.

Chapter Five: Discussion and Conclusions

5.1 Introduction

During the phase of data collection and analysis it was important to 'bracket off' other knowledge about the phenomenon of transitioning to secondary school for students with DCD. Writing the current chapter requires an 'attitudinal shift' in order to move from 'bracketing' to synthesising the findings with the relevant literature. It was important that this change in attitude was not accompanied by a change in philosophical position and that the paradigm of qualitative research and more specifically of descriptive phenomenology was maintained. This was facilitated in part by including further extracts from the transcripts when relevant, in order to keep the participants' experience at the centre of the interpretation. This chapter will present an interpretation of the findings in relation to the literature reviewed and highlight the novel findings that have emerged from this research. The Bioecological Model of Development (Bronfenbrenner & Morris, 1998) emphasises the need to understand any transitional process in terms of the person and their environment. This model has been used throughout this chapter to contextualise the findings. The chapter also includes a section concerning the limitations of the research and this is followed by a statement of recommendations for further research and actions. This chapter closes with an autobiographical reflection.

5.2 The 'General Structure' of the findings

The Bioecological Model of Development (Bronfenbrenner & Morris, 1998) gives emphasis to understanding any transitional process in the context of the multiple interactions between person and context, thus it is important to have an in-depth understanding of both the 'person' and their 'context'. This understanding can be used to inform practice and facilitate a more successful transition from primary school to secondary school for students with DCD. The general structure that emerged from the findings of this research was that transitioning accentuated the participants' DCD-related difficulties making them more aware of having the

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condition. This finding was a novel one and the experience of this type of awareness when transitioning had not emerged in any of the literature reviewed pertaining to students with other SEN either.

Bronfenbrenner (2005) conceptualises the person as evolving both biologically and psychologically. This heightened self-awareness of having DCD-related difficulties can be seen as a factor pertaining to the psychological evolution of the participants. In order to manage the transition to secondary school optimally, the participant would have needed to come to terms with this new understanding and develop ways of coping with the new challenges of the secondary school environment. When considering the transition through the lens of the Bioecological Model of Development (Bronfenbrenner & Morris, 1998), it is clear that the participants' ability to cope with this new awareness would be dependent on both the context of the transition and on their own personal characteristics. Personal characteristics are conceptualised within the model as including both 'resource characteristics' such as the physical, cognitive and emotional abilities and 'force characteristics' such as temperament, motivation and persistence. This section will focus on what can be learned from the findings in terms of personal characteristics of students with DCD and the subsequent sections will give more emphasis to the context of the transition.

The participants became more aware of the difficulties they had with tasks involving motor skills. It has been argued that problems with motor planning and programming are at the core of DCD (Vaivre-Douret et al., 2011) and thus it was unsurprisingly that the majority of the participants' DCD-related problems were in the areas of motor coordination. The literature supported the finding that the participants had problems with new motor tasks, as difficulties learning new skills have been well documented within the adolescent population with DCD (Missiuna et al., 2008; Kirby et al., 2011; Oliveira & Wanna, 2012). Participants had difficulties with new tasks such as using the tools needed for practical subjects including technical graphics and home economics, along with having problems with opening and closing their lockers. These findings suggest that the preparation for

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secondary school for students with DCD should include the opportunity to form new motor schema through practicing the specific tasks they will be performing once they transition.

All of the participants reported problems in the area of handwriting and this was widely demonstrated in the literature relating to adolescents with DCD (Kirby et al., 2008; Kirby et al., 2011; Lingam et al., 2013; Tal Saban et al., 2012). Both the Leeds consensus statement (Economic and Social Research Council, 2006) and EACD (Blank et al., 2012) proposed that handwriting should be assessed as part of the diagnostic testing for DCD and these findings support this recommendation. Six of the participants had not been sanctioned for use of a laptop in school and it is possible that if such an assessment was conducted as standard, this need would have been addressed. These bodies also recommended consideration of abilities in PE as part of the assessment. The majority of participants had problems in this area, with some reacting with demotivation and some with anxiety and even sadness:

“Em, I was bad at it (*PE*), because physically, but it hurt emotionally as well, because of the Dyspraxia.” (Participant N)

These findings concur with the results of other studies which demonstrated that adolescents with DCD have problems in relation to PE (Barnett, Dawes & Wilmut, 2012; Lingam et al., 2013; Governey & Cremin, 2013; Foulder-Hughes & Prior, 2014). The experience of PE is important, as if adolescents become adverse to exercise, they may develop more sedentary lifestyles in the future which could lead to a higher propensity to weight gain and ill health (Wagner et al., 2011). This is particularly pertinent in light of findings indicating that adolescents with DCD may be at risk of an elevated cardiac output (Chirico et al., 2012) with lower baroreflex sensitivity (Coverdale et al., 2012). It is interesting to note that typically developing students have also been found to have a lowered perception of their competence in PE in their first year of secondary school (Warburton & Spray, 2008). These feelings of inadequacy can only be compounded in students with coordination difficulties.

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Overall, these findings support the recommendation made by Capel et al. (2007) for a greater emphasis on preparation for all students whilst in primary school for the new PE syllabus of secondary school. There is also a need for adaptation of the PE curriculum so as to meet the needs of students with DCD and other motor problems.

The participants had difficulties with organisation, planning, time management and prioritising. There was evidence from the literature that generalised executive dysfunction is a common feature of DCD (Kirby et al., 2008; Wilson et al., 2013; Tal Saban et al., 2014). There was also clear evidence of neurological changes to the prefrontal cortex (Huizinga et al., 2006) with increased connectivity between brain regions occurring for the typical adolescent (Coleman, 2011). Thus, it should be acknowledged that any problems in executive function that are inherent in having DCD would be compounded by the naturally occurring changes in the brain at this stage.

The participants also had problems in the area of memory with the majority of the participants having difficulties remembering the layout of the school (spatial memory) and remembering facts such as the sequence of classes (semantic memory). They also had significant difficulties remembering to bring items to and from school and to class. Some participants had spent time doing homework but would then forget to bring it into school. Participants also discussed getting into trouble in class as they had forgotten to bring the correct materials. One participant was so anxious about forgetting books that she carried all of her books with her for the entire school day. The type of 'memory' used to remember to bring the correct books and materials to school or class is called 'prospective memory'. Prospective memory relates to a person's ability to "plan, retain and retrieve an intention as planned" (Walter & Meier, 2014, p657) and the majority of the participants had problems in this area. Problems in prospective memory have not been reported previously in any of the literature reviewed pertaining to DCD. Three of the five participants in the study conducted by Governey and Cremin (2013), concerning students with DCD transitioning to secondary school, reported

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that they had problems remembering to bring in equipment and books but the authors did not equate this to difficulties with prospective memory. The one study that was found that directly tested prospective memory in children with DCD (Chen et al., 2013) found no problems in this area, however the quantitative study had few participants and was non-randomised thus results need to be interpreted with caution. Wilson et al. (2013) reported that problems with executive function were particularly apparent in dual-task performance with a motor load and this may also be the case in terms of deficits in prospective memory and thus there may not be any actual 'impairment' in this area. There was also evidence of a link between problems in working memory and DCD (Rigoli et al., 2012; Tal Saban et al., 2014; Leonard et al., 2015; Sumner et al., 2016) and it has been demonstrated that prospective memory performance can be impaired in situations of elevated working memory load (Marsh & Hicks, 1998; West et al, 2006). There is also evidence of attentional problems in this population (Wilson et al., 2013; Chen et al., 2013; Tal Saban et al., 2014). Working memory and controlled attention have been found to be important in prospective memory as they are needed to periodically monitor for the prospective cue, whilst being busy with other tasks; and to attend to the prospective cue and switch to the prospective task when required (Wang et al., 2011) . If participants had problems with working memory and / or attention these factors may have been impacting their prospective memory. The provision of a visual cue has been shown to improve the performance of adolescents in tasks involving prospective memory (Wang et al., 2011) thus the provision of appropriate cues could be considered to help students with DCD in this area. It has also been demonstrated that a general increase in cognitive load will negatively impact performance in prospective memory tasks (Walter & Meier, 2014) and thus the increased cognitive challenges inherent in starting secondary school, may also have been a factor for the participants. It should be acknowledged that there is evidence that prospective memory is still developing in adolescence (Zollig et al., 2007) and thus other students may also have experienced problems in this area. However the narratives indicated that the participants' performance in these types of tasks were significantly worse than that of their typically developing peers:

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“Mum used to have to pack my bag for me. At the start I’d have stuff on sheets and I’d have to remember it. First year felt like chaos and this year (2nd year) isn’t that much better. I’m still forgetting books and things.”

(Participant J)

“I tended to very often forget stuff for TG I would leave pencils behind. I would break pencils, I would not bring sharpeners for broken pencils. Eh , you know, that sort of thing I would forget rubbers, I would forget this, I would forget that, ehh which meant that I never, you know, succeeded that much in TG. I didn't. It was another one of those subjects that wasn't my forte, but I can see why people would enjoy it.” (Participant A)

The majority of participants reported significant difficulties remembering their way around their new environment, with many getting lost and being late for class as a result. Findings from the literature review indicated that people with DCD can have problems in visual spatial processing and visual memory (Rigoli et al., 2012; Wilson et al., 2013; Leonard et al., 2015) and thus this may have been at the root of the participants difficulties in this area. This emphasises the need for the provision of a map coupled with a tour of the building prior to starting secondary school.

The Bioecological Model of Development (Bronfenbrenner & Morris, 1998) can be used as a lens through which to learn about the transition of students with DCD from primary school to secondary school. This findings from this section add to the understanding of the potential ‘resource characteristics’ of the students with DCD i.e. the emotional, physical and cognitive aspects of the person. This was achieved by synthesising the experiences of the participants with the literature reviewed. In summary, the findings demonstrated that the participants experienced changes both emotionally and cognitively as evidenced by the development of a heightened awareness of their DCD-related difficulties. They were more aware of their physical challenges and had difficulties carrying out many of the motor tasks required in secondary school. They also had cognitive challenges in terms of organising, planning, time-management, prioritising and remembering. This understanding of

the 'person' is important when considering any changes that could be made to the context of the transition.

5.3 Key constituents of the General Structure – Participants' Reactions

One of the key constituents of the 'general structure' of participants' experience of transitioning was that they reacted in different ways to this shared experience of increased awareness of their DCD-related difficulties. These reactions could be categorised into five groups:

- 1) acceptance of difficulties and of any assistance or accommodations provided by the school (n=3);
- 2) acceptance of the difficulties with a desire to solve problems independently and make choices as to the level of assistance or accommodations provided (n=5);
- 3) lack of acceptance with anger at the school system as this system was seen as the cause of the difficulties experienced (n=1);
- 4) acceptance of having difficulties but feeling alienated and misunderstood by peers and teachers (n=3);
- 5) problems accepting their difficulties and a feeling of being overwhelmed by them (n=3).

The Bioecological Model of Development (Bronfenbrenner & Morris, 1998) provides a template for understanding the interaction between the person and environment during a period of transition. In order to identify any rationale for the differing reactions of participants, it is also important to consider the findings in relation to theories relating to the more general process of transition. The way in which people respond to any experience of transitioning varies (Meleis et al., 2000) and individuals will complete the process of transitioning at different speeds. A possible explanation for the differing reactions experienced by the participants is that they were merely at different stages of this process. The review of the literature indicated that the majority of typically-developing students perceive themselves to

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have adapted successfully to their new environment by the interim between the end of the first week to that of the first month (Smyth et al., 2004). It is important to note that all of the participants in this study needed significantly more time to adjust, with many continuing to have problems during the second and even third trimesters of their first year.

Meleis et al. (2000) describe the first step in the process of transitioning as one in which the person's everyday life is disrupted resulting in an awareness of being in a time of change. It is possible that the participants in group five had remained at this stage. One of these participants had only just completed the first two terms of first year and thus it is possible that his situation would have improved as the year progressed. It was interesting to note that he had frequently been absent from school due to illness and this may also have negatively impacted his experience. However, another member of this group had already completed two terms of second year, while the final member had completed the first year in entirety. The reaction of these two participants appeared to have been complicated by the fact that they had only been recently diagnosed as having DCD.

The next step in the transitioning process is that the person engages with the process and identifies new methods of coping and being (Meleis et al., 2000). The participants in groups one, two and three appeared to have mastered this stage relatively well. Those in groups one and two describe an experience of being afforded the use of new coping methods whereas those in group three do not. This lack of affordance appeared to have prevented the participants in group three from moving beyond this stage. The participant in group four presented as being at the beginning of this stage. He demonstrated some success in adapting himself to the new environment, but appeared to be having difficulties devising new coping strategies. It is possible that he would have benefited from additional assistance and support to enable the development of this type of problem solving. The participants in groups three and four, therefore, remained at this stage in the transitioning process. Bridges (2010) describes the time before a completed transition as being a 'neutral zone' and that the longer the time spent in this zone

the higher the rate of disorientation and anxiety. Using Meleis et al.'s (2000) conceptualisation of the stages of transition, the participants of groups three, four and five can be seen as being in this 'neutral zone' at the time of interview.

Groups one and two appear to have reached the end of a healthy transition process as per the three indicators given by Schumacher and Meleis (1994). These indicators include: the mastery of new behaviours, a perception of personal well-being and a contentment with interpersonal relationships. It was interesting to note that three of the participants in group two were already in second year and the other two members had completed first year in its entirety. The year of study of the participants in group one varied with one being in second year, one just commencing the third term of first year and one having completed first year but not yet having commenced second year.

5.4 Exploration of the Reasons for the Differing Reactions of Participants

It has been demonstrated that transitions are a time of uncertainty, when the individual can feel insecure and anxious (Meleis et al., 2000; Bridges, 2010). It has also been established that whilst most students find the transition to secondary school difficult (West et al., 2008), students with DCD may also be coping with an increased sense of being 'different' to the majority of their peers, along with feelings of incompetence when engaging in new motor tasks and adapting to the new environment. It is clear that the participants of this study reacted to these challenges in different ways and were at different stages in the overall process of transitioning. This section will further explore some of the reasons for these differences. The Biological Model of Development (Bronfenbrenner & Morris, 1998) has already been used to enable an understanding of the 'person' and this model will now be used as a paradigm in which to understand the 'person' in 'context'.

Length of time participants knew they had DCD

Participants who had been aware of having DCD before commencing sixth class in primary school were more accepting of their difficulties than those who had not, and these participants coped best with the transition. The two exceptions to this were Participants L and H, both of whom had known that they had DCD before sixth class. Participant L had been bullied in primary school, and his expectation of being bullied again impacted his experience of first year, with resultant high levels of anxiety and a tendency to interpret the behaviour of his peers defensively. The other exception was Participant H who reported being told he was “lazy” and that he did not “try hard enough to write well” throughout primary school. This participant continued to feel angry and resentful towards the school system and this is likely to have affected his ability to adapt well to his new environment. Neither of these participants had difficulty accepting that they had DCD, but rather had difficulties which stemmed from their expectations of the school environment based on their negative past experiences.

All of the participants in groups one and two had known about their condition from an early age, whilst two of the participants in group five had only recently received their diagnosis. The microsystem of the participants refers to their immediate social and physical environment (Bronfenbrenner, 1994), this system would include the participants’ parents and teachers. Parents are generally responsible for informing their child of a diagnosis such as DCD. It is important to note that the participants who were told about their diagnosis at a later stage did not in fact have this information withheld from them. These participants were not diagnosed until this time and their parents had informed them of the diagnosis as soon as they themselves were aware of it. The reason for this later diagnosis appears to be due to a lack of awareness regarding DCD. Given the importance of receiving an earlier diagnosis, there is clearly a need for greater education of parents and teachers concerning the signs and symptoms of this condition.

The chronosystem relates to the influence of time and life stage on the individual (Bronfenbrenner, 1994) and this is also relevant when considering the stage at which

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the participant received the diagnosis. Participants who hadn't known that they had DCD before sixth class in primary coped least well with the transition and those who only learned that they had DCD whilst in secondary school coped worst of all. Learning about a diagnosis at this stage means that it is highly likely that they received the diagnosis when in adolescence. Erickson (1902 – 1995) conceptualised adolescence as being a time when individuals feels unsure of their identity and are in the process of striving to define who they are (Bronson 1959). Adolescents coping with a new diagnosis at this stage are therefore already coping with uncertainty in identity and a new diagnosis can only compound this situation. These adolescents therefore have the additional burden of integrating the fact of having DCD into their sense of personal identity. This search for identity would also be impacted by the insecurity of transitioning to secondary school. The participants who had a clearer understanding of what DCD meant in their lived world would, therefore, have less difficulty making sense of the fact that they had DCD-related problems in secondary school. Arguably these problems would have less of an impact on their sense of identity and this would facilitate a more successful transition. The findings suggest that being given a diagnosis when transitioning, together with experiencing more of the DCD-related problems, could have caused the participants to experience a crisis of identity (Marcia, 1966) which would make the insecurities inherent in any transition difficult to manage. It is also possible that the participants who had been aware of their diagnosis for a longer period of time may also have had the opportunity to find strategies to cope with their difficulties. Cheng et al. (2014) demonstrated that there is a strong correlation between flexibility in coping strategies and psychological adjustment and that a successful transition involves being able to select strategies to meet particular demands. Students who were unaware of having DCD have not been in a position of being able to consider what their challenges might be and plan strategies to overcome them. Bandura (1994) argues that coping with past adversities enables the development of a strong sense of self-efficacy and this in turn would help when transitioning to secondary school.

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When applying the Biological Model of Development (Bronfenbrenner & Morris, 1998) to these findings it is clear that there is a need for change in the microsystem, mesosystem and exosystem of students with indicators for DCD. There is a greater need for awareness of the condition in those who live and work with these children (microsystem), a need for clear channels of communication between parents and teachers in which to share concerns about possible signs and symptoms of DCD (mesosystem) and a need for easier access to the screening and assessment of this condition (exosystem).

Microsystem of the Transition – Primary and Secondary School

The majority of participants reported that they did not remember much about being in primary school and that they had felt ready to leave. Jindal-Snape and Foggie (2008) found that the expectations that participants had in primary school impacted their transition to secondary school. This appeared to be the case for the participants who perceived their experience of primary school to be a negative one. Children who had been bullied in primary school were found to have an expectation of being bullied in secondary school (Evangelou et al., 2008; Topping, 2011; Thornton et al., 2016) and this was the case for Participant L who had a history of being bullied by his peers through most of primary school.

“All through third class they (*the people in his class*) had a rule called the golden rule: that they weren’t allowed to talk or play with me in break.”
(Participant L)

As discussed, Participant H also reported having a difficult experience of primary school in that he was labelled from “junior infants” as being “too lazy” and this negatively impacted his transition to secondary school. Bridges (1986) indicated that transitioning from one stable life-stage to another, involves the ‘letting go’ of the first stage which may result in feelings of disillusionment with the situation that is left behind. This ‘disillusionment’ was not a feature of the participants’ experience and Participants J and K actually missed being in primary school. Both of these participants were female and had been recently diagnosed with DCD, they

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were now in second year and both were aged 14. They reported feelings of nostalgia for a time when they felt the same as their peers, thus missing primary school may have related more to a time when they did not know they had the diagnosis, than to the primary school itself. This feeling of nostalgia appeared to have a negative impact on their experience of secondary school, as it brought with it a certain wistfulness, that made it hard for them to 'let go' of primary school and adapt to secondary school.

"I was happy in primary. Everyone in the class was friends. Secondary school is so tough, I find it tougher than most, but maybe I just think that."

(Participant J)

Their experience further emphasises the need for an earlier diagnosis of DCD. This finding coupled with the earlier findings relating to participants who were diagnosed with DCD at this later stage suggests that students receiving a diagnosis whilst in secondary school may need access to a counselling service or additional support in order to help them come to terms with their diagnosis.

A comprehensive induction into the secondary school has been shown to be an important factor in facilitating successful transitions (Smyth et al., 2004). Students both with and without SEN have been found to have numerous concerns prior to transitioning to secondary school (West et al. 2008; Ashton, 2008; Topping, 2011) many of which could be resolved through an induction procedure i.e. concerns relating to: getting lost in the building; using their lockers and organising belongings; following the new timetable and even forming new friendships. It was clear that participants of this study were impacted by both the length and the focus of their induction periods. All of the participants who could be deemed as successfully transitioning to secondary school i.e. those in groups one and two had induction periods of at least three days. Three of these participants, all of whom attended private (fee-paying) schools, had a full week of induction and this was the longest induction period experienced by participants. In contrast, the participants in group five, the group that coped least well with the transition, only had a day's

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induction. A comprehensive period of induction is clearly an important factor in engendering a successful transition to secondary school.

The experiences of the participants in this study do not concur with the findings from Hughes et al. (2013) who found no significant evidence to suggest that children with an SEN have a worse transition experience than those without SEN. Schumacher and Meleis (1994) found that successful transitions were facilitated through preparation, the acquisition of relevant knowledge and skills and through social support, thus perhaps the converse is also true. The participants who were not afforded this type of support through a period of induction certainly had more difficult transitions. It is, however, not possible to discern whether the participants who found the transition to secondary school most difficult would have coped better had they experienced a longer, relevant and more welcoming induction. It was difficult to find specific information on the typical length and quality of the induction process in Irish and UK settings. The best information that could be gleaned was that the majority of secondary schools in Ireland have at least a day's induction (Smyth et al., 2004). There is a lack of research relating to the effectiveness of typical induction procedures in secondary schools. This would appear to be a central component in facilitating successful transitions and thus it would be interesting to conduct further research on the length and content of the induction period in relation to typical students and those with SEN. There was a clear difference in the length of induction experienced between the participants who attended private and state schools. These issues may relate to the exosystem of the students, in that the state schools may not have the resources available to conduct such an induction. It could also be due to a cultural ideology which may engender greater expectations in the private school setting. This issue requires further investigation in order to establish if students attending state schools are experiencing any form of discrimination in terms of the length of induction they receive.

The access to support and resources afforded by each of the participants' secondary schools was also inequitable. It was also noted that, with the exception

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of the school Participant L attended, participants attending private schools reported higher levels of support than those that did not. Those participants who perceived themselves as being sufficiently accommodated for, along with those who felt they were allowed to be self-directed in their choice of accommodations, coped best with adapting to their new environment. Some schools had considerable difficulty facilitating the use of laptops and this caused particular frustration and anxiety for the participants affected. Participant L had been formally assessed as requiring the use of a laptop but was not being allowed to use it by the school.

It was noted that five of the participants were reported to have an additional SEN. Three of these, Participants B and O with Dyslexia and Participant E with mild learning difficulties (unspecified), formed the group who were accepting of their DCD and of any help and accommodations given. These participants presented as being comfortable with their differences with no concerns around being perceived as 'different' from their peers. This may have been because they needed extra support and accommodations more than the other participants without co-morbidity. Participant G had Irlen Syndrome and would have accepted more accommodations but wasn't offered them. She used a laptop and wore Irlen lenses in class, but was uncomfortable in doing so, because to her knowledge she was the only student in the school using either. It is possible that her levels of comfort were negatively impacted by her school's inability to accommodate the laptop for exams and the confusion caused by inconsistent requirements regarding the mode of handing up her homework. The other participant with an additional diagnosis was Participant D, who had a Specific Language Disorder but who presented as a child who was academically able, and thus it is possible that he did not perceive the need for accommodations on this account.

It has been acknowledged that adolescence is a time when the young person seeks greater personal autonomy (Scherf, Smyth & Delgado 2013) and this involves increased independence in decision-making. This can make it especially difficult to be in a position of needing support in areas in which other students are adept. This is particularly important for students with DCD as their disability is not visible and

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thus they may not receive understanding or accommodations from teachers and peers. This lack of support from others, together with the dissonance regarding the desire for autonomy and the need for help is encapsulated in the following extract:

“Em, well, the one thing that would help would be if teachers would understand completely. I have this one teacher and like my Mam has had to come in. My Mam comes in when I have difficulties with the teachers, so I had to get my Mam in, I don't like need to get my Mam to do everything, but when everything is kind of hard, it helps.” (Participant G)

Needing extra help may hinder this process of attaining personal autonomy and thus impact the psychological development of students with DCD. Facilitating the student to make informed decisions could foster the development of autonomy. The participants who presented as managing their transition best appeared to have this level of autonomy, with some of them choosing to accept whatever supports were offered to them and some being selective in what they accepted. The participants who did not have the options they wanted offered to them coped least well. Jindal-Snape and Foggie (2008) demonstrated that students who are autonomous adapt well to the transition to secondary school. It has also been shown that students whose families encourage autonomy are more likely to transition successfully than those who don't (West et al., 2008; Topping, 2011; Ng-Knight et al. 2016). Missiuna et al. (2008) also found that facilitating students with DCD to select subjects and activities that matched their individual skill sets enabled them to experience a feeling of competency which helped foster self-esteem. These findings demonstrate the importance of finding methods of facilitating the development of autonomy in students with DCD through a model of informed decision-making within an inclusive, supportive environment.

Some of the participants also stressed the importance of teachers understanding them, even if they did not make accommodations for them. This is common emphasis for students with SEN and is well supported in the literature (Barnes-Holmes et al., 2013; Lingam et al., 2013). This may in part be due to the fact that on

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numerous occasions participants described instances where teachers inadvertently highlighted their DCD-related difficulties in front of the class, which participants found distressing. Perhaps the desire to be understood was about the desire to avoid such humiliation; if a teacher understood that 'errors' were not being made purposely they would be less likely to draw attention to them. The participants were however largely positive about their teachers and it was clear that their resource teachers were important to them.

Another important part of the microsystem of the participants in relation to transitioning to secondary school is that of the new peer group. There is evidence from the literature that having a supportive social group is important in engendering self-esteem and self-acceptance for adolescents with DCD (Lingam et al 2013). These are qualities that would in turn aid a successful transition. The formation of friendships is perceived as particularly important to children with SEN (Ashton, 2008; Topping, 2011; Governey & Cremin, 2013; Barnes-Holmes et al., 2013; Foulder-Hughes & Prior, 2014). It was clear that making friends was a priority for the participants, with many of them being content with the level of friendships they had obtained at the time of the interview. Participants who were highly motivated to be accepted by their peers, however, tended to cope least well with the transition. They were reluctant to accept any accommodations offered by the school and were anxious not to appear different to their peers in any way. The exception to this was Participant I who, although very keen not to appear different from his peers, coped comparatively well with the transition. However, his reluctance to accept accommodations may have been less to do with a desire for acceptance from his peers than to the view, apparent in his narrative, that DCD was something to be overcome rather than something to adapt to.

'Well, I wasn't good at it (rugby) when I started, I was always picked last for teams, I always enjoyed it, but I wasn't good at it when I started out, but I really worked at it. I'm a really awkward runner, I suppose. Yeah, just as I've gotten more interested, you make yourself better, you do training after

training. My father is like, you have to work on the things you're not good at.'
(Participant I)

There was also evidence in the literature of neurological changes which made the adolescent brain more sensitive to social acceptance (Blakemore & Mills, 2014; Mills et al., 2014; Schriber & Guyer, 2016) and it was interesting to note that those students who were most motivated to 'fit in' and not appear different (with the exception of Participant I who has previously been discussed) had all received a late diagnosis. This may indicate that their difficulties with assimilating this new information in order to form a more stable personal identity may have made them more susceptible to seeking affirmation from others, especially from their peers. It was also noted that the girls in the study presented as being more aware and more concerned about their social environment than the boys, with four of the six girls finding the transition to secondary school particularly difficult. There was evidence in the literature of girls taking longer than boys to adapt to transitioning to secondary school, and the authors of one study hypothesised that this might be due to the close social bonds the girls had formed in primary school, the desire to form equally close bonds in secondary school, and then feeling unsettled until this was achieved (Smyth & Darmody, 2004).

5.5 Conclusions

The Bioecological Model of Development (Bronfenbrenner & Morris, 1998) is helpful in engendering an understanding of the experience of transitioning from primary to secondary school for students with DCD. When analysing the findings through the lens of this model it was clear that although there are challenges inherent in having a condition such as DCD, the context of the transition is the primary factor with regards to facilitating a successful transition to secondary school. The micro-system of participants was seen to be particularly important and the importance of parents and teachers having a greater knowledge of this condition so that children can be diagnosed before adolescence was apparent. Participants also benefitted from a comprehensive induction period, understanding

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from teachers and the provision of accommodations as required and had difficulties making a successful transition without them.

It is also important to understand the chronosystem of the participants and the relevance of this transition occurring during adolescence in terms of the development of personal identity, the desire for personal autonomy and increased need for peer relations. The exosystem of the participants needs consideration as there were indicators that participants from private schools had better access to induction, accommodations and support, than those from state schools. This conclusion is however based on a very small sample of schools and further investigation is required to confirm these findings.

The contribution of this research to the field is primarily in the value of the descriptions given by the participants of their lived experience of transitioning. The novel findings that emerged were that the DCD-related problems experienced by the participants were accentuated by the transition and that they also experienced an increased awareness of having DCD. This finding had not emerged from any of the literature involving students with any SEN transitioning to secondary school. Another novel finding was that the reaction to this heightened awareness was dependent on the context of the transition and on the timing at which the participants received their diagnosis of DCD. Finally, the problems that participants appeared to have in prospective memory have not been reported previously in any of the literature reviewed which pertained to DCD. However, as this study was not aimed at directly measuring prospective memory this finding would need further research before any conclusions could be made in this area. There is much that can be learned from people living with DCD and there is a need for further research involving the adolescent population with a view to enabling their 'voice' to shape future educational policy and practice.

5.6 Research Limitations

The objective of the research was to discover the meaning of transitioning to secondary school for students with DCD and this objective was achieved through Giorgi's (2009) method of data analysis. It is important to reiterate that the Husserlian approach is inductive rather than deductive (Smyth, 2001) thus the aim of this research was not to find the 'answer' to a 'question' but rather to explore the meaning of a phenomenon as it presented itself to those that had first-hand experience of it. The findings of this study are not generalizable to a wider population, as this study uses a qualitative methodology and participants were selected purposively rather than randomly. However, the findings can be seen as transferable as the study was both systematic and rigorous, and there was a rich description of the phenomena that emerged with saturation of the data. The clear explanation of the data-gathering methods and recruitment procedure demonstrate the dependability of the research and the research trail and process of reflexivity demonstrate the confirmability of the findings.

Transparency and systematicity are two core principles in the establishment of the quality of the research (Meyrick, 2006). This study adhered to these principles in the following ways. There was a discussion of the epistemological and theoretical stance with justification for the methods used. The study had a clear statement of aims and objectives and there was a systematic outline of the process of data collection and analysis. The researcher strove to maintain the phenomenological attitude throughout the study and both bracketing and reflexivity were used to facilitate this.

Respondent validation along with the external validation of the findings was not conducted in this research as this did not fit with Giorgi's (2009) approach. Triangulation of methods was not used and perhaps it would have been interesting to learn about the experience of participants' parents throughout the transition. This may have caused undue presupposition in the data analysis phase which would negatively impact the ability to conduct a pure phenomenological analysis of the

participants own experiences. Due to the nature of a PhD thesis, transformations of the data by multiple researchers was not feasible.

5.7 Recommendations for further research

1. Investigation into the impact of the timing of receiving a diagnosis such as DCD on the transition from primary to secondary school.
2. Investigation into the optimal length and content of induction programmes conducted in secondary schools in relation to students with DCD.
3. Action-based research regarding adapting the PE syllabus of secondary school to be more inclusive of students with DCD.
4. Investigation of the role of difficulties in prospective memory in adolescents with DCD, using both standardised tests and more naturalistic measures in real world settings.
5. The adoption of the Leeds consensus statement (Economic and Social Research Council, 2006) regarding the diagnosis of DCD in future research involving people with the condition. This would mean that participants with DCD recruited to studies would score at or below the 5th percentile on an individually administered and culturally appropriate, norm referenced test of general motor competence.

5.8 Recommendations for Action

1. There is a need to educate the public about the signs and symptoms of having DCD. This education is particularly important for teachers who are in an ideal position to detect markers for this condition.
2. Students who receive a diagnosis of DCD whilst in secondary school should be given the option of having additional support or counselling in order to help them come to terms with the diagnosis.

3. Diagnostic testing for DCD in adolescents should include a test of handwriting and of basic PE skills.
4. Schools should have clear guidelines for the use of laptops by students with SEN. These guidelines should include standard methods for submitting homework assignments; methods for sitting both class tests and the more formal end of year exams; and methods for ensuring the laptops have a power supply when needed.
5. Where appropriate students in secondary school need to be involved in decision making regarding provision of accommodations and support.
6. Students with DCD need accommodations to the PE curriculum and coaching in primary school in preparation for the PE curriculum involved in secondary school.
7. Students with DCD need the opportunity to practice the motor patterns needed for new tasks in secondary school such as opening and closing the locker or using any equipment required for practical subjects. Where motor patterns can't be acquired suitable compensatory aids and accommodations should be put in place.
8. A booklet of recommendations could be provided to secondary schools and research could be conducted into its effectiveness with further action taken as required.

5.9 Reflective Statement

I was initially interested in researching this area as both of my children have DCD. I was also motivated by the clients I met with DCD through my work as an Occupational Therapist in Paediatrics. My eldest child transitioned into secondary school with relative ease. I had done a lot of work with him in preparation for the transition, found a school that was accommodating to his needs and set up systems to help him once he was there. My other child with DCD also has Asperger's Syndrome and Dyslexia. He had profound difficulties with the transition, but this was due to his intense unease and anxiety when dealing with change and he

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required a great deal of additional support in order to cope with this. I was conscious of the level of 'scaffolding' and support both of my children had needed and I wondered what the experience was like for other students who might not have this level of input. I found the findings relating to 'prospective memory' particularly relevant for both of my children and I was fascinated to reflect on how many of their challenges lie in this area. We always provided them with a second set of textbooks as they were unable to remember to bring the correct books home. Forgetting books had caused them a great deal of stress (especially my younger child) and it was interesting to discover that this is a common experience for students with DCD and that problems in the area of prospective memory may be part of the rationale for these difficulties. I have also lost count of the number of times we have had to drive to the school with a forgotten sports kit or drive back to get a uniform left in a locker room. I have since begun encouraging both of my children to use visual cues and this has helped them immensely. I have also noticed that this is an area of difficulty for my clients with DCD and I am interested in pursuing this further. It is really important for parents to understand that their children may have genuine problems in this area as in my experience parents can feel very frustrated at their child's difficulties with remembering to bring things to and from school.

The most interesting part of this research was the time spent hearing the experiences of the fifteen participants and the subsequent analysis of their transcripts. I felt deeply privileged to be able to learn from them and I was both surprised and humbled by how difficult things had been for some of them. It frustrated me that many of the problems they discussed could so easily be remedied. I was conscious of the importance of being discerning in my choice of research approach and meticulous in my data-analysis. I spent a great deal of time reading, learning and reflecting before data collection so that I could achieve an analysis that did justice to the participants. I was personally pleased with the process I undertook and I acquired a new set of skills in qualitative research as a result of it. The subsequent research findings have had a significant impact on my practice as an Occupational Therapist. I have set up courses to help students with

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DCD transition into secondary school and the content of these courses has been devised on the basis of my findings. Some examples of course content include ensuring students are able to open and close their lockers, organise their materials and follow a time-table. I also ensure that parents are aware of issues such as the importance of visiting the school on more than one occasion so that their child can become familiar with the topography of the school. I have joined the Board of the Dyspraxia Association of Ireland and this association has agreed to fund a booklet which I will write for schools pertaining to the transition of students with DCD from primary to secondary school. We hope to launch this in March 2017 and to distribute it to schools nationally. I am particularly keen to include a section on the use of laptops in schools as this was a common issue for the participants.

There were many times when I felt overwhelmed by the process of trying to balance my time in order to complete this PhD but I continued to be motivated by a desire to have the voices of these fifteen young people heard. The research process has affirmed my belief in the importance of learning from people who have direct experience of a phenomenon and of empowering young people by giving them a 'voice'. I hope to 'honour' the time my participants afforded me by making that voice heard. I also feel that the findings will be of great benefit to parents of students with DCD who can also feel misunderstood and who need more information to advocate for the needs of their child.

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Appendix 1: Terms used for each section of the Literature Review

Section	Terms combined with boolean logic
<p>2.2 Developmental Coordination Disorder</p> <p>(Please note that some of the literature that emerged from this search was used in the section pertaining to adolescence with DCD)</p>	<p>“Developmental Coordination Disorder” AND “Diagnosis” OR “Diagnostic Criteria”</p> <p>“Developmental Coordination Disorder” AND “DSM” OR “Diagnostic and Statistical Manual for Mental Disorders”</p> <p>“Developmental Coordination Disorder” AND “aetiology” OR “Etiology”</p> <p>“Developmental Coordination Disorder” AND “Subtypes” OR “Subtype” OR “types” OR “Type”</p> <p>“Developmental Coordination Disorder” AND “neurology” OR “neurological” OR “brain”</p> <p>“Developmental Coordination Disorder” AND “Executive function” OR “Executive skills”</p> <p>“Developmental Coordination Disorder” AND “Executive”</p> <p>“Developmental Coordination Disorder” AND “Cognition”</p> <p>“Developmental Coordination Disorder” AND “Memory”</p> <p>“Developmental Coordination Disorder” AND “prospective Memory”</p> <p>“Developmental Coordination Disorder” AND “co-morbid” OR “comorbidity”</p> <p>“Developmental Coordination Disorder” AND “Attention Deficit Hyperactivity Disorder” OR “ADHD” OR “Attention Deficit Disorder”</p> <p>“Developmental Coordination Disorder” AND “Specific Language Impairment”</p>

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	<p>“Developmental Coordination Disorder” AND “Specific Learning Disability”</p> <p>“Developmental Coordination Disorder” AND “Dyscalculia” OR “Dysgraphia” OR “Dyslexia”</p> <p>“Developmental Coordination Disorder” AND “autistic Spectrum Disorder” OR “autism” OR “Asperger’s Syndrome” OR “Pervasive Developmental Delay”</p>
2.3 Adolescence	<p>“adolescence” OR “adolescent” OR “teenager” OR “puberty” AND “development”</p> <p>“adolescence” OR “adolescent” OR “teenager” OR “Puberty” AND “neurology” OR “neurological” OR “brain”</p> <p>“adolescence” OR “adolescent” OR “teenager” OR “puberty” AND “psychology” OR “psychological”</p> <p>“adolescence” OR “adolescent” OR “teenager” OR “puberty” AND “Identity”</p>
2.4 Adolescence/Early Adulthood and Developmental Coordination Disorder (See note under 2.1 Developmental Coordination Disorder)	<p>“adolescence” OR “adolescent” OR “teenager” AND “Developmental Coordination Disorder” OR “Dyspraxia”</p> <p>“Developmental Coordination Disorder” OR “Dyspraxia” AND “prognosis” OR “persistence”</p> <p>“adolescence” OR “adolescent” OR “teenager” AND “Developmental Coordination Disorder” AND “exercise” OR “fitness” OR “health”</p> <p>“adolescence” OR “adolescent” OR “teenager” AND “Developmental Coordination Disorder” AND “self-esteem” OR “confidence” OR “Self-worth”</p>
2.5 Transitioning	<p>“Transition” OR “Transitions” OR “change” AND “theory” OR “theories”</p>

	<p>“Transition” OR “Transitions” OR “change” AND “process” OR “stages”</p> <p>“Transition” OR “Transitions” OR “change” AND “theory” OR “theories” AND “Models” OR “Model”</p> <p>“Transition” OR “Transitions” OR “change” AND “theory” OR “theories” AND “coping” OR “adapting”</p> <p>“Bioecological Model of development”</p> <p>The following websites were searched for relevant policy documents: http://www.education.ie/en/ http://ncse.ie/ http://www.ncca.ie/en/</p>
<p>2.6 Transitioning from Primary to Secondary School</p>	<p>“Developmental Coordination Disorder” OR “Dyspraxia” AND “transfer” OR “transferring” OR “transition” OR “transitioning” AND “secondary school” OR “secondary” OR “post primary” OR “high school” OR “second level” OR “year seven”</p> <p>“adolescent” OR “teenager” OR “student” AND “transfer” OR “transferring” OR “transition” OR “transitioning” AND “secondary school” OR “secondary” OR “post primary” OR “high school” OR “second level” OR “year seven”</p> <p>“Special Educational Needs” OR “Disability” AND “transfer” OR “transferring” OR “transition” OR “transitioning” AND “secondary school” OR “secondary” OR “post primary” OR “high school” OR “second level” OR “year seven”</p>

Appendix 2: Letter circulated to parents via the Dyspraxia Association of Ireland

Dear parent,

My name is Dorothy Armstrong. I am an Occupational Therapist and Doctoral candidate at the National University of Ireland, Galway. I am conducting a research study in the area of Developmental Coordination Disorder (Dyspraxia). Although there has been ongoing research into this area regarding children aged five to eleven there is very little on the adolescent population and I am very interested in learning about their experiences of having this condition.

I would like to talk to adolescents with DCD (Dyspraxia) who have completed at least two terms of secondary school and are not yet in third year regarding their experiences of transitioning into secondary school. Participants will also need to have an assessment of the level of Developmental Coordination Disorder (Dyspraxia) experienced using the Movement ABC – 2 as part of this research. Please contact me if you feel that your child would like to participate and I will send you more information. Please be reassured that receiving this information does not mean you are part of the study, it just gives you a chance to have more details before you make your decision. Please contact me either by email dorothy.armstrong@nuigalway.ie or phone at 086 3613376. I would really appreciate it if interested people could respond to me within the next two weeks.

With kind regards,

Dorothy Armstrong

BSc, MSc in Occupational Therapy
University Teacher at National University of Ireland Galway,
Private Practitioner
Member of the Irish Association of Occupational Therapy
dorothy.armstrong@nuigalway.ie
Phone: 086 3613376

Appendix 3: Letter to be sent to parents who respond to initial invitation.

Dear (insert the name of the parent),

Thank you so much for your interest in my research. I am sending you this additional information so you and your child can decide if you would be interested in taking part in this project. I am very interested in hearing about any impact that Developmental Coordination Disorder (Dyspraxia) may have on adolescents as they transition into secondary school. I am keen to learn about their strengths, talents and what went well for them as well as some of the challenges they may have had.

If you are happy for (name of child) to participate in my study please fill out the enclosed information sheet. Please be aware that I may not be able to include all interested parties if there is a large response but that I will let you know if your child is to take part either way. Participation will involve an assessment of the level of Developmental Coordination Disorder (Dyspraxia) they experience using the Movement ABC – 2. The assessment lasts between 30 and 40 minutes and involves the child doing activities involving hand movement, aiming and catching activities and balance. Results of the assessments will be discussed with you, you and your child will have the opportunity to ask any questions you have about them. Your child will then be interviewed by me about their experiences of transitioning into secondary school. Children will be invited to meet with me at a time convenient to them in their own home. Interviews will take approximately one hour. We can schedule the session over more than one meeting if that works best. A parent or care-giver needs to be on the premises at all times during the meeting. The discussion will be audio-taped as it will not be possible for me to remember everything your child has said. I will then read through what the child said and organise it into themes and may visit your child again to make sure I'm representing what they said accurately. The tapes will be transcribed by me at a later date and all transcriptions, tapes and documentation relating to the study will be securely stored in a locked filing cabinet. All data will be filed under a code rather than under the child's name. Audio tapes and transcriptions will be destroyed after the study and confidentiality will be maintained in any presentations of the research. It is also important that you know that your child can choose to drop out of the process at any point if they wish to. If having read through the above information you and (child's name) would like to be considered for participation in the study please post me back (stamped address envelope enclosed) the information sheet regarding your child. I would be most grateful if you could respond within the next two weeks.

With kind regards,

Dorothy Armstrong
BSc, MSc in Occupational Therapy
University Teacher at National University of Ireland Galway,
Private Practitioner
Member of the Irish Association of Occupational Therapy
dorothy.armstrong@nuigalway.ie
Phone: 086 3613376

Appendix 4: Form Re: Demographic Information

Thank you for your interest in this research project. If you are interested in participating please complete the following information sheet and return it to me in the stamped addressed envelope provided.

Parent's Name(s): _____

Address: _____

Telephone Number: _____

Parent's email address: _____

Child's Name: _____

Child's Date of Birth: _____

Has your child been assessed for Developmental Coordination Disorder (Dyspraxia)?
Yes NO

If yes, when did this assessment occur? _____

Which professional diagnosed the condition (you can tick more than one box)?

Paediatric Neurologist

Occupational Therapist

Psychologist

GP

Other, please specify _____

Is your child aware of his/her diagnosis?

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Yes NO

Please list any other conditions for which your child has been diagnosed:

What school does your child currently attend?

What year is your child currently in at school?

Does your child use assistive technology at school e.g. use of a lap-top?

Yes NO

If 'yes', please list the types of assistive technology that your child uses:
Thank you so much for completing this information sheet. Please note that I may not be able to include your child if I receive more responses than required for this study. I will contact you and let you whether your child is selected or not. Please note that participating in the study will not lead to any form of therapy.

With kind regards,

Dorothy Armstrong
BSc, MSc in Occupational Therapy
University Teacher at National University of Ireland Galway,
Private Practitioner
Member of the Irish Association of Occupational Therapy
dorothy.armstrong@nuigalway.ie
Phone: 086 3613376

Appendix 5: Approval from the Board of the Dyspraxia Association to proceed

--Original Email Message -----(reprinted with permission)

From: "Harry Conway" <harry@dyspraxia.ie>
To: "Dorothy Armstrong" <dorothyarmstrong@eircom.net>
Sent: Monday, 11 February, 2013 9:22:45 AM
Subject: study

Hi Dorothy,

Please forgive the delay in responding to you and indeed for not getting your information letter out to our targeted members for clients you may want to interview .We have just completed two studies with our members and we needed them to be fully verified and closed off with the researchers before I got approval for your study from the board.

If it is not too late for you we are now in a position to move forward with yours .We also have another targeted study for parents which is going out this week which required board approval also.

Let me know if you still need us and no problem either way Dorothy.

Kind regards

Harry

Dyspraxia Association

Email: info@dyspraxia.ie

Web: www.dyspraxia.ie

Appendix 6: Consent form for interview with the participant

In signing this document, I am giving my consent for _____ be interviewed by Dorothy Armstrong. S/he will also participate in a short assessment of his/her Developmental Coordination Disorder (Dyspraxia). I understand that s/he will be part of a research study which explores the experiences of adolescents with Developmental Coordination Disorder (Dyspraxia) transitioning to secondary school.

I understand that s/he will be asked some questions about her experiences of being in school and participating in both leisure pursuits and in everyday activities. The interview will take about an hour and will be audio-taped. I (or a care-taker) will be on the premises throughout the interview.

This interview was granted freely. I am aware that the interview is entirely voluntary, and that even after the interview begins either myself or my child can refuse to answer any specific questions or decide to end the interview at any point. I have been told that no reports of this study will ever identify my child in any way. I also understand that we can request the findings of this research and they will be given to us.

I understand that the findings of the study will be used as part of a doctoral thesis and may be used to publish other articles. I give my permission for them to be used on the condition that my child's identity is not revealed.

Date _____

Parent's signature _____

Adolescent's signature _____

Interviewer's signature _____

**Appendix 7: Letter submitted to the Dyspraxia Association website
thanking the board and association members for their assistance in
this research**

Thank you to all the teenagers who took part in my study which looked at the experience of transitioning to secondary school with DCD (Dyspraxia). I felt very honoured to meet you all and I've learned so much from all you told me. I hope to finish my PhD in the next year and I will give a summary of the findings to Dyspraxia Ireland. I also hope to present the findings at teacher's conferences and other venues where I can share the valuable insights you have given me. Thank you so much for giving me your time, I was really privileged to meet you all and hear your stories. Thanks also to the parents of the teenagers and to Dyspraxia Ireland.

I am indebted to you all,
Dorothy Armstrong
BSc MSc Occupational Therapy

Appendix 8: The researcher's assumptions regarding the experience of transitioning into secondary school for adolescents with DCD prior to interviewing the participants

Having worked with children and some teenagers with DCD in my Occupational Therapy practice I have some assumptions about what it may be like to transition into secondary school with this condition. I also have a child currently in 6th class with DCD who will be transitioning but I feel his experience will not be typical as he has an unusually high IQ so that the things he may have difficulty with will probably be overshadowed by the things that he will find easy. He is not typical of the teenagers with DCD that I have met and has never needed extra help in school nor has he used a laptop instead of writing. I primarily meet with children under the age of 12 for therapy and then more briefly with teenagers who need one-off assessments due to handwriting problems. I have not as yet worked with a client regarding their transition into secondary school. I have read a lot about what DCD is and what might cause it and I have studied the best and most evidence based methods of treatment but I feel very unclear about what the experience of having DCD is particularly in the teenage population. I wonder if I will notice any visible signs of their DCD.

I'm assuming that the participants I will interview will have problems with handwriting and may need to use a laptop. I assume that those who use the laptop will find this very beneficial though perhaps they may find it hard to use a different medium to that of writing as it will make them different to other students. As long as the participants can charge the laptop on a regular basis in school I don't foresee

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any problems with using a laptop aside from the aforementioned embarrassment they may feel. I assume a standard laptop would work well for them all.

I assume that they will have difficulty with sport and dislike PE intensely. I'm assuming that the girls will have less social difficulties than the boys as I feel that boys are expected to participate in sports and this may have hindered them socially and led to them having less social opportunities. I'm assuming that the girls will be more socially aware and will not want to be different from their peers whereas the boys may not care as much about this. I'm assuming that the participants may experience difficulties making friends in secondary school but I think it's possible that this will get easier as they progress through first year as teenagers tend to 'hang out' rather than engage in sports all the time. I'd imagine that tying laces and doing small buttons may be hard for them and that this will have an impact on changing for PE. I would also assume that they'd avoid certain subjects like home economics and art which require a great deal of hand eye coordination. I'd assume that organization will be problematic for them and that finding their way around the school, remembering and organizing books will be a challenge. I'm not sure if they'll feel stressed or excited about going in and I'm unclear about the level of support they'll have when they'll get there. I'm assuming they still have resource hours as they had in primary but I'm unclear about what this looks like at this stage. I'm unsure as to what the overall experience will be for them and whether it will be a positive or negative one, but I'm assuming schools will not really understand what DCD is and thus accommodations will not be made for many of the participants. I'm assuming that participants will find exams stressful. I'm assuming that the students

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themselves will not be entirely comfortable with having DCD. I think parent support will be a large factor in how they adjust.

Appendix 9: Reflections on the Interviews

A reflective journal was kept during the data analysis phase, on listening to each interview and completing the transcriptions the researcher reflected on the extent to which the interview was led rather than directed by the researcher and the impressions gleaned from things other than the client's voice e.g. the non-verbal communication of the client. These reflections were typed and placed in an appendix to enable transparency. The reflective diary helped analyse the researcher's adherence to the descriptive phenomenological method by consideration of the following:

- The extent to which the interview contained a 'description' of the phenomenon
- The extent to which the interviewer maintained a 'researcher' as opposed to 'clinician' role i.e. the extent to which the interview maintained a focus on the phenomenon rather than on the participant.
- The extent to which researcher used leading questions.

Reflections on the Interviews

Participant A – notes taken post interviews and listening to the transcripts

This participant was very confident and articulate and very few questions were required when conducting this interview. The opening question was 'what do you remember about your last year of primary school?', the participant said he couldn't remember much about this and asked me what I was looking for by asking this. I explained that I was trying to help him get back into a 'place' where he could

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remember as much as he could about going into secondary school and this seemed to help him. I rephrased the question to 'what can you tell me about how your school prepared you for the move to secondary school'. Participant A was then able to recount many examples of what was done, during his discussion he mentioned something that had worried him about the transition so I asked him 'was there anything else that worried you?' and this allowed him to elaborate on several issues that had concerned him. At times I rephrased what he had said to ensure I had understood him correctly. I asked very few specific questions but I did ask 'were there any problems with the uniform' and 'did you visit the school'. Once he had described the pre-transitioning phase I moved on to questions about the first week of secondary school 'what was the first week of school like', he needed time to think and I allowed for the pauses and did not interrupt the silences, he then described this time. When he seemed to have said all that he wanted to I asked 'how do you feel the DCD impacted the first year of secondary school' and he had no difficulty describing his experiences, at one point he became distracted by the Dictaphone and I brought him back to topic with 'so you were telling me about the sport'. I was able to get him to elaborate on topics by saying 'tell me more about' or by asking 'how do you think your DCD affected you in that'. In this way, the questions I posed are about what the participant says and are used to enable him to elaborate on his points e.g. 'were there any other subjects that the DCD affected?' or 'you were saying about losing things, tell me more about that.'

When he discussed the lunch room and how busy it was, he mentioned that he did not have anyone to have lunch with and felt lonely, on listening back to the interview it's clear that he did not want to dwell on this, after this point his throat

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became dry and he quickly changed topic to what the food in the canteen was like. I asked him 'what were the opportunities in school to make friends' and this seemed to lift things for him and he discussed how he eventually made friends but was unsure how this had happened. I consciously ended the interview with safer territory by asking him how he got to and from school and then ended with 'is there anything else you'd like to say about your first year of secondary school' to which he answered 'no, I think that's it.'

Further Reflections

The interview contained a 'description' of the phenomenon, the participant rarely went off topic and when he did I was able to redirect him to good effect. No advice was given to the participant thus I maintained a 'researcher' as opposed to 'clinician' role, there was also no evidence of counselling the participant. There were two questions that could be seen as leading 'did you have any problems with the uniform' and 'did you visit the school before you started', they are still open questions but the participant had not thought about either issues until I asked thus these were probably not important issues to the participant and this should be considered during the analysis. Other questions all led from what the participant had already said, apart from the opening questions 'tell me about your last term of primary; tell me about your first week of school; tell me about your first year of school' which were deemed necessary in capturing the experiencing.

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Participant B – notes taken post interviews and listening to the transcripts

Participant B needed greater direction than participant A, the 'tell me about your last year of primary school' resulted in a lot of dialogue that was not directly relevant but it did enable her to relax. I rephrased the question to 'what did the primary school do to prepare you for secondary', this resulted in more relevant data. I paraphrased what she had said about primary school preparation to ensure I had understood what she had said. I used more direct questions with her after this as she had difficulty staying on topic, I asked 'did you visit the secondary school' and she discussed in detail about her visits and the entrance exams, I did not need to ask questions as she gave a lot of description. She mentioned homework so I asked for more detail here 'did you find the homework difficult?' and she discusses this and how the teachers help her with it. Again I paraphrase what she has said about homework before moving to another topic. I ask her how she found the uniform and she responds with a lot of detail but goes back to talking about earlier years in primary and the help she got there, I bring her back to topic with 'how do you find PE' and she responds. She talks about the different uniforms and equipment she needs for sport and then talks about dropping things so I ask her 'how do you manage going to the different classes with different books. She explains a system she uses in detail. The interview continues in this way with questions being developed from what she says and new open questions being asked when she went off topic. I make sure she has nothing more to add at the end of the interview by asking her if there is any other way she feels the Dyspraxia

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affected her in secondary school, she gives some answers, I paraphrase and ask again until she is sure there is nothing else she wants to add.

Further Reflections

Although it was necessary to direct this client more than was needed for participant A, I was careful not to lead the interview and all questions asked were open in nature. The description given was her own and it was necessary to allow her to go off topic in order to help her relax. She had difficulty with concentration and it was necessary of her to recount her experience as it came to her mind and not to muddle her if what she said was not directly relevant e.g. she briefly described the plot of a film she'd watched in secondary school. No advice or counselling was given thus I remained in researcher role. This participant had Dyslexia as well as DCD and some of the problems listed e.g. problems remembering lists and concepts would be more to do with this than DCD so this would need to be taken into account in the analysis.

Participant C – notes taken post interviews and listening to the transcripts

This participant had only been diagnosed with DCD two months previously and had gone through first year without the diagnosis. She was still unclear about what DCD was and was at a stage where she wanted to deny any problems and this impacted her ability to describe any problems she was having. She was also not very interested in school and it did not appear to be a priority in her life and this impacted the description too. It was difficult to get her to stay on topic at times

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and she was nervous and somewhat defensive at the start of the interview, but this lessened as she proceeded. I opened with my usual question ‘what do you remember about primary school – about how you got ready for secondary school’ she discussed academic preparation and there was nothing different here to another child without DCD. The theme of ‘there is nothing different’ remained throughout the interview, though her described experience clearly indicated her problems with organization, forgetting items and with concentrating. At times she denied what she had just said ‘I didn’t really forget things I just pretended to so I didn’t have to do the work’. It was hard for her to see how the DCD had impacted her as she didn’t know what it was. It was clear that she didn’t want to have it and didn’t want any extra help for it. In order to contextualize the data I needed to find out what she thought DCD was so I had to move away from a direct description of transitioning. There was a lot of background noise – door bell ringing, infant crying in another room and people talking but this didn’t seem to impact the participant but it did make it hard for me to focus at times. Where possible the participant led the interview away from any problems and when I gently led her back she deflected where possible. These deflections were in themselves important in terms of the data and reflect her lived experience of denial.

Further Reflections

This participant needed greater direction than the previous 2 as she went off topic a great deal, however on listening back to the transcript questions posed were not leading. I did need to give some explanation of what DCD was but this was done purely for the sake of the research and not as a therapist. After the interview I

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spent some time with her and her mum explaining DCD and answering their questions. This interview moved away from the participant describing transitioning to secondary school at times but this reflected her difficulty accepting her diagnosis and her apprehensiveness about talking to me and I felt the occasional diversion was important in maintaining the flow and eventually getting her to talk about the issues.

Participant D

This participant had a speech and language disorder, he had mild problems processing what I said but I left spaces in the interview and paraphrased what he'd said which seemed to help. He had a mild stutter and at times it was clear he finds it hard to formulate words. He answered 'it was alright' to a lot of questions and I needed to ask a lot of questions to delve further into what he said e.g. 'what else do you remember about that?', paraphrase answer, then 'do you remember anything else'. Things that were a problem to other participants like not being able to use the locker were not seen as a problem to him and he just carried all his books around, neither did he worry much about forgotten homework and books. He coped well with everything and saw nothing as a problem. He was aware of what he was good at – academics and didn't need to be good at everything. He admitted finding some sports hard but as a result he limited his involvement in them. Insight may be limited and social awareness may be limited. He reported no self-care problems but he had struggled to learn to tie laces and had only managed

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it the year before as his mum had 'pestered' him about it, I wondered if there were many things he had difficulty with that he was unaware of.

Further reflections

Remained in researcher role, there would have been no place for a clinical role in this interview anyway. I didn't pose leading questions and the participant was quite concrete in his thinking so tended not to elaborate, his speech difficulties were also a factor here. The participant gave a concrete description. His perception is that all went really well and the 'Dyspraxia' didn't impact him at all. I wondered what his parents would have said and if their story would have been different. I wondered about his insight and self-awareness. He seemed younger than the other participants and young for his age.

Participant E

She was well able to express herself and to describe her experiences at length. My impressions were of a girl who was socially immature, she had little interest in peer acceptance in school and talked about 'playing' with the neighbouring children who were a lot younger than her. She was very happy to share her experiences and seemed very resilient. I could hear stress in her voice when she talked about exams. I was struck by the lack of emotion in her face and voice when she told me that she was teased and called names in school, her response impressed as one of weary acceptance. She was very aware of what she found difficult and very happy to get as much help and support from the school as possible. She seemed to be a

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very confident girl and yet she did not include many things she did well in her description, I wondered where the confidence had come from. I could tell from some of what she said in her interview that she is well supported and encouraged to take risks at home, she is encouraged to be the best she can – there was no ‘poor thing, don’t try that’ mentality here and she had imbued that. There were lots of things that were difficult for her but she seemed to just keep going and all in all impressed as being happy in school.

Further Reflections

At one point in the interview I did give some advice, she was discussing her problems reading and I suggested listening to CDs or watching TV, I had never gone into ‘therapist mode’ before whilst interviewing and I wonder why I did this time, it may have been because she had so many difficulties. This didn’t impact the interview unduly as it was just a quick suggestion and I quickly realized what I’d done, paraphrased our last point and recommenced in researcher mode. There were no leading questions in the interview and it was easy to keep this participant to the description of the phenomena, she had good concentration and likes to tell her story.

Participant F

This participant impressed as being very articulate and mature. He led the interview and didn’t need much direction, he was well able to tell his story and this description was particular rich and insightful. He was very self-aware. He had

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begun secondary with a sense of being different but emerged with a sense that everyone has differences it's just that some people are more honest about that. It was hard to believe that I was speaking with a 14 year old and I wondered why this participant was so mature and resilient.

Further reflections

The participant led the interview and needed very little direction, he stayed on the topic of the phenomenon. I had no problem staying in researcher mode and there were no leading questions on my part.

Participant G

Very rich description. Participant very articulate and self-aware, also knows a lot about DCD and how it impacts her. Needed minimal questions. She frequently paused to say she wasn't good at explaining and yet her explanations were deep and clear. She has clear sensory issues and the light needed to be quite dim. She was shy initially but by the time the interview commenced she was relaxed and ready to talk and seemed to enjoy the conversation. At this stage of the research process I can see I'm in clear researcher mode and I'm happy with my technique.

Participant H

When I arrived to the house the mum and the participant had been arguing about something that had happened that day and I was worried that the participant felt

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they had to do the interview. I explained that there was no pressure at all on him and he didn't have to participate but he said he was happy to do so. His mother sat in on the interview so I was careful to explain to her that I wanted to hear about the participant's experience from his own perspective and I think if I hadn't done this she would have talked through the interview. She appeared tense and stressed. When his mother was there the participant was angry and more reticent and negative in what he said. She left after 10 minutes as another child needed her and the participant visibly relaxed and recounted the more positive aspects of his experience, when she returned he became negative again. He was able to give good descriptions of both the negative and positive aspects of secondary school so both were real to him and not merely done because his mother was there. At the close of the interview I asked him if there was anything he would like to add and he said 'no' and his mother told me there was 'loads more' but I explained again that what I needed was the participant's perspective. The participant was clearly angry at the start of the interview and somewhat monosyllabic but after 6 minutes he became more relaxed and immersed in his description of his first 2 terms of secondary. He described many of the same issues as the other participants but in his mind everything seemed to be some-one else's fault and the system was against him. I wondered why he was so different to the other participants but after the interview his mother spoke to me about secondary school and she had many of the same attitudes. This was one of the harder interviews but I was able to help the participant relax and tell his story without leading it and without going into therapist mode.

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Participant I

This participant was very keen to share his experiences. He was very articulate and was able to give a rich description. He became more candid about how hard it is for him to be 'different' and how tough this was in first year, he sees how much he's matured and how he has learned from the experience. His empathy to others was very evident. He was open and honest, there was no defensiveness and I struck by his level of maturity. I continue to wonder why some people cope with the same difficulties so differently. This participant didn't expect or even want many accommodations and was grateful for what he was afforded. He felt his experience overall had been a positive one. At this stage in the interview process my skills in interviewing with this method are well honed and meet my criteria.

Participant J

She was diagnosed one month ago and seemed confused and upset by things. She was nervous in the beginning and very sad, though she didn't cry, she came close to tears at the start of the interview. I felt really sad for this participant as she'd never received any help and had very poor coping skills and I had to make a conscious effort to remain in researcher role during the interview as a result. I found I went into therapist mode by offering advice twice but quickly realized what I was doing and told her I'd get back to that after the interview was over, which I did. I spent a while after the interview with the participant and her mother discussing what DCD is and ways to help, both seemed overwhelmed and the advice seemed to really

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help. She gave a rich description of her experience and I was left with the impression of a lost child.

Participant K

It's interesting to see how similar the issues raised by each participant are, I'm wondering if I've reached data saturation. The participant was articulate and good at reflecting and telling her story. The environment of the participants seems to have a big impact on how they cope with their differences and this person's school didn't seem to make allowances at all. I had no difficulty remaining in researcher role and she didn't need much directing and seemed very happy to tell her story, it was as if telling the story was really helpful for her. I was struck by how much more difficult the social dimension of school seems to be for the girls and how hard they seem to find it to fit in. Many of them discuss how girls judge each other, this was not apparent in the boys' interviews.

Participant L

I felt the participant was contradicting himself at times and when I listened back to the tape, this was indeed the case, I'm not sure which parts of his narrative were factually true but I understand that this is his perception of the truth. I found it hard to follow his train of thought at times and as a result his description veered away from the subject of transition on occasion. It was really difficult to concentrate on what he was saying and bring him back to the topic. There are some parts of the description that are useful and on topic but they are hard to get

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to. It felt like walking through mud and fog at times. At one point he describes getting gum in his locker and a fan and a radiator causing the locker door to expand and becoming impossible to open, this feels a little far fetched and I wonder if another student put gum in his lock and he imagined the rest of the story. He recounts a history of him being bullied and I feel really sad for him as I can see how vulnerable he is. He says one of the coaches kicked the ball so hard it broke someone's leg and again I wonder how much factual truth is in the description. I felt exhausted at the end of the interview, I needed to concentrate to a much greater extent than in any of the others and even with that I lost his train of thought at times. I remind myself that what's important in this research approach is the participant's perception of the truth and suspend my judgements otherwise.

Participant M

This participant needed very little direction, when I was unclear about what he meant I asked 'am I hearing you say that ...' He was very confident with clear insight into his DCD. He had been diagnosed from a young age and was very aware of what DCD was and how it impacted him. He presented as being very mature and it was interesting to note that things that were problems to other students didn't seem to be perceived as being as difficult for him. He didn't seem to expect accommodations to be made for him and instead came up with his own solutions which he then presented to the school. I was aware of how no real new data was emerging and I began to wonder had I reached saturation. Although he discussed having problems with concentration he maintained concentration for the entire

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interview which lasted over an hour. He seemed keen to share his experiences. He came across as very self-confident and self-directed.

Participant N

The participant's mum remained in the room and I perceived that he benefitted from having her there. He became upset at one point in the interview – when I asked him to tell me more about his first week. I asked him if he'd like to stop the interview or if he'd like a break and he said he'd like a break. He left the room and his mum stayed. I emphasised to her that we could finish the interview at that stage and she said she would leave it up to him and would see how he felt when he came back. On his return, he was feeling better, I asked him once again if he'd like to stop but he said he'd like to keep going. It was hard not to go into therapist mode but I maintained the researcher role, but I did make an effort to be careful as to when I asked him to tell me more. He was very articulate and was able to recount the description, he told me he'd gone to have a play with his baby sister and was feeling better now. There were no more signs of distress. After the interview, I gave him time to debrief and also talked with his mother who reassured me that he was feeling fine and had wanted to continue.

Participant O

This interview was one of the shortest at 30 minutes. The participant gave very little elaboration on his points and tended to state the facts. He needed to be

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asked more questions than the other participants and 10 minutes into the interview he was having difficulty sitting still and needed to fidget with objects around him. He also moved on his chair a lot, he did not appear distressed he just seemed unable to keep still. He did however appear stressed on occasion when more information was asked about a topic e.g. when asked 'can you tell me more about that' he appeared unable to do so, as if he felt he had stated the facts and there was no more to say. This was a very factual account of his transition.

Further reflections

I remained in researcher mode and there was no moving into a therapist role. I couldn't use my usual mode of interviewing which involved a lot of the question 'tell me more about that' as this seem to make the client stressed and confused. I had to stick with concrete questions such as "tell me about how you found using the locker" which meant I had to direct the topics discussed to a greater extent than I would normally but I remained careful not to lead the answers.

Appendix 10: List of the central structures from each of the transcripts

Out growing primary school and switching focus to secondary school. (PA, PM, PN, PO)

Transitioned from a supportive primary school where participant was well prepared for the transition to secondary school. (PB, PI)

Left primary with a sense of pride and felt ready to move to secondary school. (PD)

Anxious to transition to secondary school as unhappy in primary (PE)

Saying goodbye to the familiar and nurturing environment of primary school was hard but participant felt well prepared. (PF)

Primary school was a happy place where things were easier participant wasn't ready to leave and wishes she was back there. (PK).

In primary school participant felt the same as everyone else. (PC)

Leaving primary school was not about moving on but about loss and unfinished business (PG)

Primary school teacher misunderstood participant and thought he was lazy so leaving it behind was OK. (PH)

Primary school was a happy place where things were easier and participant wishes she was back there. (PJ)

Things got better for participant in sixth class and he worried he'd go back to being bullied in secondary school (PL)

What mattered most to him when he started secondary school was making friends and that went fine. (PI)

The inductions and open day helped a little but she still felt very nervous (PJ)

The participant felt nervous in the first week because it was different (PM)

He did not feel that his primary school or the induction for secondary school prepared him well for secondary school (PN)

Open Day and Induction made the participant feel positive about the secondary school (PA PD PE)

Induction was boring but OK (PO)

The first week of school was both fun and scary (PL)

Starting secondary school was a shock as there was very little induction before they were into the regular routine (PK)

The participant realised that starting secondary school is challenging for everyone. (PF)

The induction done by the secondary school was fine (PC PH)

It was hard that there was no preparation in primary or in secondary school for the transition (PG)

Transitioning highlighted the participant's difficulties (PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO).

The participant felt that she performed worse than other students at a range of school related activities. (PE)

The participant accepted her need for extra help in secondary school and would have liked more help (PE)

The participant identified himself less and less as a student with special education needs as he progressed through first year (PK)

DCD didn't make his transition any different to anyone else's. (PD)

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The participant learned to come up with solutions to difficulties (PA, PB, PK , PO, PN)

The participant found things they were good at when they transitioned to secondary school (PN)

Having DCD helped the participant narrow down his subject choices (PO).

The participant felt that his bad start in secondary school would define him (PN)

He gradually moved from receiving help to self-management (PF)

The participant learned to let go of what he wasn't good at and form an identity based on this and his strengths (PA)

The participant wanted people to understand how her DCD impacted her. She wanted them to know that just because they can't see it doesn't mean it isn't there. (PG)

The participant learned that there were a lot of things that she found difficult to do and she struggled to fit this into her image of herself. (PC)

The participant discovered a lot strengths and new things they enjoyed in secondary school. (PB, PL)

It's hard to get used to the longer day and increased demands. (PN)

The participant found his own ways to do things that challenged him. (PH)

Transitioning meant more choice and a chance to be more self-directed. (PE)

The participant found it hard to adapt to the higher standards and self-direction required in secondary school. (PG)

The participant felt well supported by the staff at secondary school. (PE, PO)

Lack of accommodation in school made things so much harder for the participant. (PG)

There were very few accommodations made for the participant. (PJ)

The participant felt adrift and unsupported in first year. (PN)

The laptop really helps but it's not always accommodated for by teachers. (PM)

The learning environment of secondary school was harsh. (PK)

The secondary school seemed chaotic and disorganised. (PJ)

The participant felt that his secondary school teachers are against him and didn't help enough. (PH)

She found it hard to fit in and be accepted by the other students. (PL)

The teachers in secondary school created an unsafe and unequal learning environment. (PJ)

The participant was happy with his own academic progress in first year. (PD)

The participant got all the support that was needed from the school. (PA, PD)

When teachers understood her difficulties she felt much better. (PG)

The school accommodated the participant's needs. (PH)

Having parental support really helped. (PG PH PO)

The participant accepts that she has differences and feels that her school accommodates her differences well. (PB)

Being able to use technology made such a difference and was essential to the participant (PO)

Transitioning meant having to let go activities she was good at e.g. stage school and doing activities that made her feel less good than other students. (PJ)

He was uncomfortable with the visual accommodations like the laptop and special locker. (PH)

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DCD doesn't define the participant (PF)

Having DCD is a large part of the participant's identity, it makes sense of things for her. (PG)

The participant accepts that he has DCD but doesn't want allowances made, he does his best to find ways around his difficulties. (PI PM)

The participant is coping well with the mixture of classes and the higher expectations teachers have of secondary school students. (PB PI)

The participant does not want to conform to the rules and higher expectations teachers have of secondary school students and is having problems with the new subjects. (PC)

She would like to do better but with minimal effort from herself. (PC)

The participant doesn't want other students to know about his DCD and will only accept accommodations that aren't visible to other students. (PI)

The participant took his time when making good friends in first year. (PA)

The participant is happy in the new social world of secondary school. (PB)

The participant found it hard to fit in and be accepted by the other students. (PL)

The participant felt intimidated by other students and felt it was essential to stay in her own social circle and never stand out. (PJ)

He has a good group of friends, he had been teased by some other students but this lessened as he reduced the help he got from the special needs department. (PF)

Transitioning meant great social opportunities and she values socialising over school work. Fitting in at secondary school was very important to her. (PC)

The problems her DCD causes and the accommodations she needs because of them makes her feel that she's perceived as a 'weirdo' and heightens her social anxiety. (PG)

The hardest thing about first year was that she didn't fit in or connect with anyone. (PK)

The participant had all the friends he wanted in first year. (PO)

Transitioning to secondary school involved keeping old friends and making new ones. (PD)

Transitioning to secondary school allowed him to leave behind the alienation of primary school. (PM)

The participant grew tired of explaining the accommodations received. (PB, PN)

The participant still socialised with primary school children and didn't transition well socially. (PE)

Transitioning involved family support. (PH)

The participant's parents were an important part of his transition. (PM)

Transitioning involved taking on new enjoyable challenges. (PG PM)

Appendix 11: Table organizing the list of structures from each transcript into core structures across the transcripts

Core Structure	Constituent structures
<p>Attitude / feelings about leaving primary school</p>	<p>Out growing primary school and switching focus to secondary school. (PA, PM, PN, PO)</p> <p>Transitioned from a supportive primary school where participant was well prepared for the transition to secondary school. (PB, PI)</p> <p>Left primary with a sense of pride and felt ready to move to secondary school. (PD)</p> <p>Anxious to transition to secondary school as unhappy in primary (PE)</p> <p>Saying goodbye to the familiar and nurturing environment of primary school was hard but participant felt well prepared. (PF)</p> <p>Primary school was a happy place where things were easier participant wasn't ready to leave and wishes she was back there. (PK).</p> <p>Leaving primary school was not about moving on but about loss and unfinished business (PG)</p> <p>Primary school teacher misunderstood participant and thought he was lazy so leaving it behind was OK. (PH)</p> <p>Primary school was a happy place where things were easier and participant wishes she was back there. (PJ)</p> <p>Things got better for participant in sixth class and he worried he'd go back to being bullied in secondary school (PL)</p> <p>Transitioning to secondary school allowed him to leave behind the alienation of primary school. (PM)</p>
<p>Experience of the 'Neutral zone' – in between leaving primary and starting the full schedule of classes in secondary.</p>	<p>The inductions and open day helped a little but she still felt very nervous (PJ)</p> <p>The participant felt nervous in the first week because it was different (PM)</p> <p>He did not feel that his primary school or the induction for secondary school prepared him well for secondary school (PN)</p> <p>Open Day and Induction made the participant feel positive about the secondary school (PA PD PE)</p> <p>Induction was boring but OK (PO)</p> <p>The first week of school was both fun and scary (PL)</p> <p>The induction done by the secondary school was fine (PC PH)</p> <p>It was hard that there was no preparation in primary school or in secondary school for the transition (PG)</p> <p>Starting secondary school was a shock as there was very little induction before they were into the regular routine (PK)</p>

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<p>Being in secondary school meant that the problems caused by having DCD were highlighted</p>	<p>Transitioning highlighted the participant's difficulties (PA, PB, PC, PD, PE, PG, PH, PI, PJ, PK, PL, PM, PN, PO). The participant learned that there were a lot of things that she found difficult to do. (PC) The participant felt that she performed worse than other students at a range of school related activities. (PE)</p>
<p>Experience of resource time / learning support and accommodations made for the participant by the school because of the problems caused by their having DCD</p>	<p>The participant accepted her need for extra help in secondary school and would have liked more help (PE) Lack of accommodation in school made things so much harder for the participant. (PG) There were very few accommodations made for the participant. (PJ) The laptop really helps but it's not always accommodated for by teachers. (PM) The participant accepts that she has differences and feels that her school accommodates her differences well. (PB) Being able to use technology made such a difference and was essential to the participant (PO) He was uncomfortable with the visual accommodations like the laptop and special locker. (PH) The participant accepts that he has DCD but doesn't want allowances made. (PI PM) The problems her DCD causes and the accommodations she needs because of them makes her feel that she's perceived as a 'weirdo' and heightens her social anxiety. (PG) The participant grew tired of explaining the accommodations received. (PB, PN) The participant doesn't want other students to know about his DCD and will only accept accommodations that aren't visible to other students. (PI)</p>
<p>Experience of the teaching environment outside of the Special Education Department</p>	<p>The participant wanted people to understand how her DCD impacted her. She wanted them to know that just because they can't see it doesn't mean it isn't there. (PG) The learning environment of secondary school was harsh. (PK) The secondary school seemed chaotic and disorganised. (PJ) The teachers in secondary school created an unsafe and unequal learning environment. (PJ) When teachers understood her difficulties she felt much better. (PG)</p>

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	<p>The participant felt well supported by the staff at secondary school. (PE, PO)</p> <p>The participant felt adrift and unsupported in first year. (PN)</p> <p>The participant felt that his secondary school teachers are against him and didn't help enough. (PH)</p> <p>The participant got all the support that was needed from the school. (PA, PD)</p> <p>The school accommodated the participant's needs. (PH)</p>
<p>Experience of the new social world of secondary school</p>	<p>She found it hard to fit in and be accepted by the other students. (PL)</p> <p>What mattered most to him when he started secondary school was making friends and that went fine. (PI)</p> <p>The participant doesn't want other students to know about his DCD. (PI)</p> <p>The problems her DCD causes and the accommodations she needs because of them makes her feel that she's perceived as a 'weirdo' and heightens her social anxiety. (PG)</p> <p>The participant took his time when making good friends in first year. (PA)</p> <p>The participant is happy in the new social world of secondary school. (PB)</p> <p>The participant found it hard to fit in and be accepted by the other students. (PL)</p> <p>The participant felt intimidated by other students and felt it was essential to stay in her own social circle and never stand out. (PJ)</p> <p>In primary school participant felt the same as everyone else. (PC)</p> <p>He has a good group of friends, he had been teased by some other students but this lessened as he reduced the help he got from the special needs department. (PF)</p> <p>Transitioning meant great social opportunities and she values socialising over school work. Fitting in at secondary school was very important to her. (PC)</p> <p>The hardest thing about first year was that she didn't fit in or connect with anyone. (PK)</p> <p>The participant had all the friends he wanted in first year. (PO)</p> <p>Transitioning to secondary school involved keeping old friends and making new ones. (PD)</p> <p>The participant still socialised with primary school children and didn't transition well socially. (PE)</p>

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	<p>The participant wanted people to understand how her DCD impacted her. She wanted them to know that just because they can't see it doesn't mean it isn't there. (PG)</p>
<p>Experience of transitioning from the role of the primary school student into the more responsible role of a secondary school student</p>	<p>The participant learned to come up with solutions to difficulties (PA, PB, PK, PO, PN) The participant found things they were good at when they transitioned to secondary school (PN) The participant discovered a lot strengths and new things they enjoyed in secondary school. (PB, PL) He gradually moved from receiving help to self-management (PF) It's hard to get used to the longer day and increased demands. (PN) The participant found his own ways to do things that challenged him. (PH) Transitioning meant more choice and a chance to be more self-directed. (PE) The participant found it hard to adapt to the higher standards and self-direction required in secondary school. (PG) The learning environment of secondary school was harsh. (PK) The participant was happy with his own academic progress in first year. (PD) Having DCD helped the participant narrow down his subject choices (PO). The participant accepts that he has DCD but doesn't want allowances made, he does his best to find ways around his difficulties. (PI PM) The participant is coping well with the mixture of classes and the higher expectations teachers have of secondary school students. (PB PI) The participant does not want to conform to the rules and higher expectations teachers have of secondary school students and is having problems with the new subjects. (PC) She would like to do better but with minimal effort from herself. (PC) Transitioning involved taking on new enjoyable challenges. (PG PM)</p>
<p>The impact of having DCD on participants' identity /self-image during the transitional period</p>	<p>The participant realised that starting secondary school is challenging for everyone. (PF) The participant identified himself less and less as a student with special education needs as he progressed through first year (PK)</p>

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	<p>The participant felt that his bad start in secondary school would define him (PN)</p> <p>The participant learned to let go of what he wasn't good at and form an identity based on this and his strengths (PA)</p> <p>The participant learned that there were a lot of things that she found difficult to do and she struggled to fit this into her image of herself. (PC)</p> <p>DCD didn't make his transition any different to anyone else's. (PD)</p> <p>The participant accepts that she has differences (PB)</p> <p>Transitioning meant having to let go activities she was good at e.g. stage school and doing activities that made her feel less good than other students. (PJ)</p> <p>DCD doesn't define the participant (PF)</p> <p>Having DCD is a large part of the participant's identity, it makes sense of things for her. (PG)</p> <p>The participant felt that she performed worse than other students at a range of school related activities. (PE)</p> <p>The participant realised that starting secondary school is challenging for everyone. (PF)</p>
<p>Participants experience of family support</p>	<p>Having parental support really helped. (PG PH PO)</p> <p>Transitioning involved family support. (PH)</p> <p>The participant's parents were an important part of his transition. (PM)</p>

Appendix 12: Central Meanings of each of the nine structures from step five.

Core Structure: Attitude / feelings about leaving primary school

Constituent structures	Similar constituents grouped together	Transformation to central meaning of each sub-constituent	Transformation to central meaning of structure
<p>Out growing primary school and switching focus to secondary school. (PA, PM, PN, PO) Transitioned from a supportive primary school where participant was well prepared for the transition to secondary school. (PB, PI) Left primary with a sense of pride and felt ready to move to secondary school. (PD) Anxious to transition to secondary school as unhappy in primary (PE) Saying goodbye to the familiar and nurturing environment of primary school was hard but participant felt well prepared. (PF) Primary school was a happy place where things were easier participant wasn't ready to leave and wishes she was back there. (PK).</p>	<p>Happy/Neutral experience of primary and ready to leave Out growing primary school and switching focus to secondary school. (PA, PM, PN, PO) Transitioned from a supportive primary school where participant was well prepared for the transition to secondary school. (PB, PI) Left primary with a sense of pride and felt ready to move to secondary school. (PD) Saying goodbye to the familiar and nurturing environment of primary school was hard but participant felt well prepared. (PF) Negative experience of primary and ready to leave Transitioning to secondary school allowed him to leave behind the alienation of primary school. (PM)</p>	<p>Eight of the participants felt ready to transition to secondary school, four felt bored in primary school and were looking forward to new challenges. Participant D left with a feeling of pride for his accomplishments and Participant F felt ready to leave but sad to say goodbye to the familiar nurturing environment of primary. Four of the participants had experienced difficulties in primary school and were anxious to leave. Three of the participants didn't feel ready to leave the safe environment of primary</p>	<p>Participants' attitude to leaving primary school varied. Some felt prepared and were ready to move on; some were anxious to escape difficult circumstances that they had encountered there; and some felt reluctant to leave this more sheltered environment.</p>

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<p>Leaving primary school was not about moving on but about loss and unfinished business (PG)</p> <p>Primary school teacher misunderstood participant and thought he was lazy so leaving it behind was OK. (PH)</p> <p>Primary school was a happy place where things were easier and participant wishes she was back there. (PJ)</p> <p>Things got better for participant in sixth class and he worried he'd go back to being bullied in secondary school (PL)</p> <p>Transitioning to secondary school allowed him to leave behind the alienation of primary school. (PM)</p>	<p>Anxious to transition to secondary school as unhappy in primary (PE)</p> <p>Primary school teacher misunderstood participant and thought he was lazy so leaving it behind was OK. (PH)</p> <p>Things got better for participant in sixth class and he worried he'd go back to being bullied in secondary school (PL)</p> <p>Not ready to leave</p> <p>Primary school was a happy place where things were easier participant wasn't ready to leave and wishes she was back there. (PK).</p> <p>Leaving primary school was not about moving on but about loss and unfinished business (PG)</p> <p>Primary school was a happy place where things were easier and participant wishes she was back there. (PJ)</p>		
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Core Structure: Experience of the 'Neutral zone' – in between leaving primary and starting the full schedule of classes in secondary school.

Constituent structures	Similar constituents grouped together	Transformation to central meaning of structure	Transformation to central meaning of structure	Transformation to central meaning of structure
The inductions and open	Helpful induction	Four of the participants found the open	Some of the participants stated that	The response to the induction

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<p>day helped a little but she still felt very nervous (PJ) The participant felt nervous in the first week because it was different (PM) He did not feel that his primary school or the induction for secondary school prepared him well for secondary school (PN) Open Day and Induction made the participant feel positive about the secondary school (PA PD PE) Induction was boring but OK (PO) The first week of school was both fun</p>	<p>The inductions and open day helped a little but she still felt very nervous (PJ) Open Day and Induction made the participant feel positive about the secondary school (PA PD PE) sufficient induction Induction was boring but OK (PO) The induction done by the secondary school was fine (PC PH) Insufficient induction He did not feel that his primary school or the induction for secondary school prepared him well for secondary school (PN) It was hard that there was no preparation in primary or in secondary</p>	<p>day and school induction helpful in their transition, whilst three rated this as being adequate. Two of the participants felt unprepared by the secondary school for the start of term. Two of the participants expressed being nervous in the first week.</p>	<p>they felt nervous starting secondary school. Some participants found the school's induction helpful, whilst others found it an adequate experience. Some participants felt they were not adequately prepared for transition.</p>	<p>process of the schools was mixed with some finding it helpful, others finding it adequate and some inadequate.</p>
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<p>and scary (PL) The induction done by the secondary school was fine (PC PH) It was hard that there was no preparation in primary or in secondary school for the transition (PG) Starting secondary school was a shock as there was very little induction before they were into the regular routine (PK)</p>	<p>school for the transition (PG) Starting secondary school was a shock as there was very little induction before they were into the regular routine (PK) First week nerves The participant felt nervous in the first week because it was different (PM) The first week of school was both fun and scary (PL)</p>			
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Core Structure: Being in secondary school meant that the problems caused by having DCD were highlighted

Constituent structures	Similar constituents grouped together	Transformation to central meaning of structure
<p>Transitioning highlighted the participant's difficulties (PA, PB, PC, PD, PE, PG, PH, PI, PJ, PK, PL, PM, PN, PO). The participant learned that there were a lot of things that she</p>	<p>(Constituent structures already form a similar group)</p>	<p>Transitioning to secondary school highlighted the participant's DCD related difficulties.</p>

<p>found difficult to do. (PC) The participant felt that she performed worse than other students at a range of school related activities. (PE)</p>		
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Core Structure: Experience of resource time / learning support and accommodations made for the participant by the school because of the problems caused by their having DCD

Constituent structures	Similar constituents grouped together	Transformation to central meaning of structure	Transformation to central meaning of structure	Transformation to central meaning of structure
<p>The participant accepted her need for extra help in secondary school and would have liked more help (PE) Lack of accommodation in school made things so much harder for the participant. (PG) There were very few accommodations made for the participant. (PJ) The laptop really helps</p>	<p>Not enough accommodations Lack of accommodation in school made things so much harder for the participant. (PG) There were very few accommodations made for the participant. (PJ) The laptop really helps but it's not always accommodated for by teachers. (PM)</p>	<p>Four of the participants felt that their needs were not adequately catered for, whilst two felt they were well accommodated. Six of the participants were uncomfortable with accommodations that were noticeable by others such as using a laptop and one participant refused any such accommodations. Participants</p>	<p>Six of the participants were uncomfortable with any accommodations that were noticeable by other students and one participant refused accommodations on this basis. Participants also found it tiresome to explain why they had accommodations. Four participants felt they were insufficiently accommodated for whilst</p>	<p>Six participants were uncomfortable with accommodations that were noticeable by other students and participants found explaining these accommodations to others tiresome. Four participants felt they were insufficiently accommodated for whilst two were happy with accommodations made.</p>

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<p>but it's not always accommodated for by teachers. (PM) The participant accepts that she has differences and feels that her school accommodates her differences well. (PB) Being able to use technology made such a difference and was essential to the participant (PO) He was uncomfortable with the visual accommodations like the laptop and special locker. (PH) The participant accepts that he has DCD but doesn't want allowances made. (PI PM) The problems her DCD causes and</p>	<p>The participant accepted her need for extra help in secondary school and would have liked more help (PE) Happy with accommodations The participant accepts that she has differences and feels that her school accommodates her differences well. (PB) Being able to use technology made such a difference and was essential to the participant (PO) Uncomfortable with accommodations He was uncomfortable with the visual accommodations like the laptop and special locker. (PH)</p>	<p>found it tiresome to have to explain their accommodations to others.</p>	<p>two felt well their needs were well accommodated.</p>	
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<p>the accommodations she needs because of them makes her feel that she's perceived as a 'weirdo' and heightens her social anxiety. (PG)</p> <p>The participant grew tired of explaining the accommodations received. (PB, PN)</p> <p>The participant doesn't want other students to know about his DCD and will only accept accommodations that aren't visible to other students. (PI)</p>	<p>The participant accepts that he has DCD but doesn't want allowances made. (PI PM)</p> <p>The problems her DCD causes and the accommodations she needs because of them makes her feel that she's perceived as a 'weirdo' and heightens her social anxiety. (PG)</p> <p>The participant grew tired of explaining the accommodations received. (PB, PN)</p> <p>The participant doesn't want other students to know about his DCD and will only accept accommodations that aren't visible to other students. (PI)</p>			
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Core Structure: Experience of the teaching environment outside of the Special Education Department

Constituent structures	Similar constituents grouped together	Transformation to central meaning of structure	Transformation to central meaning of structure
<p>The participant wanted people to understand how her DCD impacted her. She wanted them to know that just because they can't see it doesn't mean it isn't there. (PG)</p> <p>The learning environment of secondary school was harsh. (PK)</p> <p>The secondary school seemed chaotic and disorganised. (PJ)</p> <p>The teachers in secondary school created an unsafe and unequal learning environment. (PJ)</p> <p>When teachers understood her difficulties she felt much better. (PG)</p> <p>The participant felt well supported by the staff at secondary school. (PE, PO)</p> <p>The participant felt adrift and unsupported in first year. (PN)</p> <p>The participant felt that his secondary school teachers are against him and didn't help enough. (PH)</p> <p>The participant got all the support that was needed from the school. (PA, PD)</p>	<p>Understanding</p> <p>The participant wanted people to understand how her DCD impacted her. She wanted them to know that just because they can't see it doesn't mean it isn't there. (PG)</p> <p>When teachers understood her difficulties she felt much better. (PG)</p> <p>Poor learning environment</p> <p>The learning environment of secondary school was harsh. (PK)</p> <p>The secondary school seemed chaotic and disorganised. (PJ)</p> <p>The teachers in secondary school created an unsafe and unequal learning environment. (PJ)</p> <p>The participant felt adrift and unsupported in first year. (PN)</p> <p>The participant felt that his secondary school teachers are against him and didn't help enough. (PH)</p>	<p>It was important that teachers understood the potential impact of DCD on the participant.</p> <p>Four participants found the new learning environment very difficult and did not feel nurtured or supported.</p> <p>Five participants felt well supported in their new learning environment.</p>	<p>Four participants found teacher's to be generally unsupportive of their needs whilst five participants felt well supported.</p> <p>It was important that teachers understood the potential impact of DCD on the participant.</p>

<p>The school accommodated the participant's needs. (PH)</p>	<p>Well supported The participant felt well supported by the staff at secondary school. (PE, PO) The participant got all the support that was needed from the school. (PA, PD) The school accommodated the participant's needs. (PH)</p>		
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Core Structure: Experience of the new social world of secondary school

Constituent structures	Similar constituents grouped together	Transformation to central meaning of structure
<p>She found it hard to fit in and be accepted by the other students. (PL) What mattered most to him when he started secondary school was making friends and that went fine. (PI) The participant doesn't want other students to know about his DCD. (PI) The problems her DCD causes and the accommodations she needs because of them makes her feel that she's perceived as a 'weirdo' and heightens her social anxiety. (PG) In primary school participant felt the same as everyone else. (PC) The participant took his time when making good friends in first year. (PA)</p>	<p>Being on the outside She found it hard to fit in and be accepted by the other students. (PL) The participant still socialised with primary school children and didn't transition well socially. (PE) The hardest thing about first year was that she didn't fit in or connect with anyone. (PK) The participant wanted people to understand how her DCD impacted her. She wanted them to know that just because they can't see it doesn't mean it isn't there. (PG) In primary school participant felt the same as everyone else. (PC)</p>	<p>Four participants found it difficult to make friends or find acceptance amongst their peers whilst seven were satisfied with the amount and quality of their friendships in first year. Four participants felt that their differences made them potential targets for intimidation from other students.</p>

<p>The participant is happy in the new social world of secondary school. (PB)</p> <p>The participant found it hard to fit in and be accepted by the other students. (PL)</p> <p>The participant felt intimidated by other students and felt it was essential to stay in her own social circle and never stand out. (PJ)</p> <p>He has a good group of friends, he had been teased by some other students but this lessened as he reduced the help he got from the special needs department. (PF)</p> <p>Transitioning meant great social opportunities and she values socialising over school work. Fitting in at secondary school was very important to her. (PC)</p> <p>The hardest thing about first year was that she didn't fit in or connect with anyone. (PK)</p> <p>The participant had all the friends he wanted in first year. (PO)</p> <p>Transitioning to secondary school involved keeping old friends and making new ones. (PD)</p> <p>The participant still socialised with primary school children and didn't transition well socially. (PE)</p> <p>The participant wanted people to understand how her DCD impacted her. She wanted them to</p>	<p>Happy in new social world</p> <p>What mattered most to him when he started secondary school was making friends and that went fine. (PI)</p> <p>The participant took his time when making good friends in first year. (PA)</p> <p>The participant is happy in the new social world of secondary school. (PB)</p> <p>He has a good group of friends, (PF)</p> <p>Transitioning meant great social opportunities and she values socialising over school work. Fitting in at secondary school was very important to her. (PC)</p> <p>The participant had all the friends he wanted in first year. (PO)</p> <p>Transitioning to secondary school involved keeping old friends and making new ones. (PD)</p> <p>Not wanting to be different</p> <p>The participant doesn't want other students to know about his DCD. (PI)</p> <p>The participant felt intimidated by other students and felt it was essential to stay in her own social circle and never stand out. (PJ)</p> <p>He had been teased by some other students but this lessened as he reduced the help he got</p>	
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<p>know that just because they can't see it doesn't mean it isn't there. (PG)</p>	<p>from the special needs department. (PF) The problems her DCD causes and the accommodations she needs because of them makes her feel that she's perceived as a 'weirdo' and heightens her social anxiety. (PG)</p>	
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Core Structure: Experience of transitioning from the role of the primary school student into the more responsible role of a secondary school student

Constituent structures	Similar constituents grouped together	Transformation to central meaning of structure	Transformation to central meaning of structure
<p>The participant learned to come up with solutions to difficulties (PA, PB, PK, PO, PN) The participant found things they were good at when they transitioned to secondary school (PN) The participant discovered a lot strengths and new things they enjoyed in secondary school. (PB, PL) It's hard to get used to the longer day and increased demands. (PN) The participant found his own ways to do things that challenged him. (PH) Transitioning meant more choice and a</p>	<p>Becoming self-directed The participant learned to come up with solutions to difficulties (PA, PB, PK, PO, PN) The participant found his own ways to do things that challenged him. (PH) Having DCD helped the participant narrow down his subject choices (PO). The participant was happy with his own academic progress in first year. (PD) The participant accepts that he has DCD but doesn't want allowances made, he does his best to find ways around his difficulties. (PI PM)</p>	<p>As the year progressed some participants began to devise their own solutions to their difficulties and rely less on outside help. Some even began to enjoy the new challenges and level of choice afforded them. Some of the participants discovered strengths and abilities they had previously been unaware of. Some coped well with the change. Others found it harder to adapt</p>	<p>As the year progressed some participants began rely less on outside help and problem solve for themselves. Some enjoyed the new challenges and level of choice afforded them and some discovered new strengths and abilities. Others found it harder to adapt to the longer day and to the rules and demands of secondary school.</p>

<p>chance to be more self-directed. (PE) The participant found it hard to adapt to the higher standards and self-direction required in secondary school. (PG) The learning environment of secondary school was harsh. (PK) The participant was happy with his own academic progress in first year. (PD) Having DCD helped the participant narrow down his subject choices (PO). The participant accepts that he has DCD but doesn't want allowances made, he does his best to find ways around his difficulties. (PI PM) The participant is coping well with the mixture of classes and the higher expectations teachers have of secondary school students. (PB PI) The participant does not want to conform to the rules and higher expectations teachers have of secondary school students and is having problems</p>	<p>He gradually moved from receiving help to self-management (PF) Transitioning meant more choice and a chance to be more self-directed. (PE) Transitioning involved taking on new enjoyable challenges. (PG PM) Finding their strengths The participant found things they were good at when they transitioned to secondary school (PN) The participant discovered a lot strengths and new things they enjoyed in secondary school. (PB, PL) The participant is coping well with the mixture of classes and the higher expectations teachers have of secondary school students. (PB PI) Difficulties It's hard to get used to the longer day and increased demands. (PN) The participant found it hard to adapt to the higher standards and self-direction required in secondary school. (PG) The learning environment of secondary school was harsh. (PK)</p>	<p>to the longer day and to the rules and demands of secondary school.</p>	
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<p>with the new subjects. (PC) She would like to do better but with minimal effort from herself. (PC) Transitioning involved taking on new enjoyable challenges. (PG PM) He gradually moved from receiving help to self-management (PF)</p>	<p>The participant does not want to conform to the rules and higher expectations teachers have of secondary school students and is having problems with the new subjects. (PC) She would like to do better but with minimal effort from herself. (PC)</p>		
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Core Structure: The impact of having DCD on participants' identity /self-image during the transitional period

Constituent structures	Similar constituents grouped together	Transformation to central meaning of structure	Transformation to central meaning of structure
<p>The participant realised that starting secondary school is challenging for everyone. (PF) The participant identified himself less and less as a student with special education needs as he progressed through first year (PK) The participant felt that his bad start in secondary school would define him (PN)</p>	<p>Just like everyone else The participant realised that starting secondary school is challenging for everyone. (PF) DCD didn't make his transition any different to anyone else's. (PD) Accepting The participant learned to let go of what he wasn't good at and form an identity based on this and his strengths (PA)</p>	<p>Some participants recognised that students without DCD could find the transition difficult too. Some began to accept their difficulties and learn that they also had strengths. Some refused to be defined by their DCD and others found the acceptance of their DCD reassuring. Some found the awareness of their difficulties difficult and felt defined by them. Some felt inferior to other students.</p>	<p>Some participants found it difficult to cope with their differences and felt inferior to others. Other participants recognised that students without DCD struggled too. Some began to accept their difficulties and learned about their strengths. Others refused to be defined by their DCD</p>

<p>The participant learned to let go of what he wasn't good at and form an identity based on this and his strengths (PA) The participant learned that there were a lot of things that she found difficult to do and she struggled to fit this into her image of herself. (PC) DCD didn't make his transition any different to anyone else's. (PD) The participant accepts that she has differences (PB) Transitioning meant having to let go activities she was good at e.g. stage school and doing activities that made her feel less good than other students. (PJ) DCD doesn't define the participant (PF) Having DCD is a large part of the participant's identity, it makes</p>	<p>The participant accepts that she has differences (PB) Having DCD is a large part of the participant's identity, it makes sense of things for her. (PG) Negative self-image The participant learned that there were a lot of things that she found difficult to do and she struggled to fit this into her image of herself. (PC) Transitioning meant having to let go activities she was good at e.g. stage school and doing activities that made her feel less good than other students. (PJ) The participant felt that she performed worse than other students at a range of school related activities. (PE) The participant felt that his bad start in secondary school would define him (PN) More than my DCD</p>		<p>whilst some found the acceptance of their DCD reassuring.</p>
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<p>sense of things for her. (PG) The participant felt that she performed worse than other students at a range of school related activities. (PE)</p>	<p>DCD doesn't define the participant (PF)</p>		
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Constituent structures	Similar constituents grouped together	Transformation to central meaning of structure
<p>Having parental support really helped. (PG PH PO) Transitioning involved family support. (PH) The participant's parents were an important part of his transition. (PM)</p>	<p>(Constituent structures already form a similar group)</p>	<p>Participants found the support of their families helpful.</p>

