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School-teachers’ awareness of Developmental Coordination Delay (DCD) in children.

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Author’s Declaration

I, the undersigned declare that this project which I am submitting is all my own work and that the data presented is authentic.

______________________ (Printed Name)

______________________ (Signature)

Date / /
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Title: Primary School-Teachers awareness of Developmental Co-ordination Delay (DCD).

Background: Developmental Co-ordination Delay (DCD) is estimated to affect 5-6% of school children (1). School-teachers play an integral role in noting delayed signs of motor development in children (2). Limited research has been carried out investigating the awareness that Irish school-teachers demonstrate of DCD.

Objectives: To determine the awareness that Irish primary school-teachers have of DCD, in children.

Methods: Qualitative methodology involving three focus groups was conducted in a semi-structured interview style. Eight eligible primary school teachers (female) participated in the study. Each teacher was qualified within the last 5 years and had at least 1 year of experience teaching senior infants or first class children. Data was audio-taped, transcribed verbatim and analysed using thematic analysis.

Results: Overall, Irish school-teachers display low awareness of DCD.
Three main themes influencing this awareness emerged: ‘Barriers/Facilitators to understanding’; ‘Experience’, and ‘Perceptions of their own roles/responsibilities’ in the identification of DCD.
Familiarity with the term DCD, lack of college training and enthusiasm to learn all contribute to the teachers’ understanding of DCD. The number of years a teacher is qualified and the incidence of a child with DCD in the classroom links to their experience. Lack of resources, use of physical education and placing responsibility on parents and resource teachers highlights the teachers’ perception of their role in the identification DCD.

Conclusions: Irish school-teachers display low awareness of DCD. Strategies may be implemented to educate teachers and promote partnerships with other professional bodies specialising in motor delays, thus increasing early identification and intervention of children with DCD.

Keywords: ‘Developmental Co-ordination Delay’ (DCD), ‘school-teachers’, ‘awareness’
2. Introduction:

In simplest terms, a child with Developmental Coordination Delay (DCD) is ‘one who has difficulty with motor co-ordination’, (Gilberg, 2003). Children with DCD are estimated to represent 5-6% of the school-aged population, (APA, 2000 and Kaplan et al, 2001).

According to diagnostic criteria, (APA, 2000) children with DCD have normal intellectual abilities but experience problems with motor co-ordination, such as dressing, cutting with scissors, copying from the board and ball skills, (Rivard et al, 2007), activities that significantly interfere with academic achievement and activities of daily living, (Missiuna et al, 2005), causing daily frustration for the child.

As children’s problems usually become more obvious when they enter the school system (Dewey et al, 2002), school-teachers play an integral role in noting irregular or delayed signs of motor development (Miller et al, 2001).

Perhaps the daily contact with their pupils which enables teachers -more than parents- to compare the performances of children of the same age, make teachers’ ratings of the motor behaviour a more suitable candidate for the identification of ‘real’ problems in daily life (Netelenbos, 2005).

Through classroom observations and communication of concerns regarding both motor and behavioural problems, teachers can ensure that the needs of children with DCD are recognised and addressed (Dewey et al, 2001), thus facilitate early identification and timely intervention (Missiuna et al, 2004).

Although the factors influencing teachers’ perceptions of children with DCD have not been empirically tested, previous studies conducted would suggest that teachers’ perceptions of DCD may be influenced by a child’s ‘gender’, ‘behaviour’ and the ‘type of motor problem’ they demonstrate (Rivard et al, 2007).

Many researchers have identified secondary complications that occur later in life, if a child is not diagnosed with DCD. If these children are not identified and do not receive adequate intervention, problems may persist to adulthood with long-term behavioural, academic, psychological, and social difficulties, including poor perceived social and physical competence, social isolation, poor self-esteem and higher rates of psychiatric problems (Piek and Edwards,1997, Kirby et al, 2005 and Rivard et al, 2007).

In a study by Dixon (2003), parents of children with DCD viewed the recognition of their child’s difficulties as a ‘turning point’, creating a greater understanding and desire
to help by the teachers, which had a positive effect on the child’s overall performance. Unfortunately, as literature suggests, school-teachers miss many children who may be experiencing motor limitations in their classrooms (Green et al, 2005). Thus, it is paramount that teachers are aware of this motor disorder, as well as it’s presenting factors in order to ensure identification of DCD is as early as possible in a child’s life.

Although the identification process of DCD relies heavily on teachers’ perceptions (Peters et al, 2001), few studies have looked directly at whether the professionals who are expected to help children with specific learning difficulties have sufficient training and knowledge about them or understand their full implications (Kirby et al, 2005).

3. Aims & Objectives:

- To examine the awareness and knowledge that newly-qualified school-teachers in Ireland have of Developmental Co-ordination Delay, (DCD).

- To investigate the factors that influence the knowledge that school-teachers’ have of DCD.
4. Methodology:

4.1 Study Design:
A qualitative study design using focus group methodology was deemed appropriate to answer this research question. Focus groups were delivered in a similar style to semi-structured interviews. These are a carefully planned series of discussions designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment (Kreuger and Casey, 2000). Focus groups present a more natural environment than that of an individual interview because participants are influencing and being influenced by others, (Kreuger, 2000). Participants were therefore selected on the criteria that they would have something to say on the topic, had similar socio-characteristics and would be comfortable talking to the interviewer and each other (Richardson and Rabiee, 2000). This method also allows for immediate clarification of issues that may arise (Hollis et al., 2002).

4.2 Ethical Approval:
Ethical approval was granted by the EHS University of Limerick Faculty of Education and Health Sciences Research Ethics Committee. Written informed consent was obtained from all participants.

4.3 Inclusion/Exclusion Criteria:

Inclusion Criteria:
- Primary school-teachers, of male or female gender, who have qualified from college with a maximum of 5 years teaching experience.
- Primary school-teachers who have at least 1 year teaching experience of senior infants or first class pupils, where the children are aged between 6-8 years.
- School-teachers working in Irish primary schools with a minimum 200 pupils.
Exclusion Criteria:

- Primary school-teachers who have greater than 5 years teaching experience.
- Primary school-teachers who have no experience teaching senior infants or first class.
- Primary school-teachers teaching in a school with less than 200 pupils.
- Primary school-teachers who have had any additional training in the area of motor skill development or Developmental Co-ordination Delay (DCD).

4.4 Selection Procedure:

Purposeful sampling was employed to identify suitable candidates, who had been qualified within the last 5 years, (to ensure participation of the most recently educated teachers). Teachers were required to have at least 1 year experience of teaching Senior Infant or first class children. This particular sample was chosen as McCall and Craft (2000) suggest that the most important time for the identification and development of poor motor skills is between 1.5-7 years of age. A list of all primary schools was obtained from the website www.schooldays.ie/articles/primary-Schools-in-Ireland-by-County prioritising primary schools with a number of pupils greater than 200. This large number would ensure a greater incidence of teachers fitting the inclusion criteria, within each school. A list of 20 primary schools was randomly selected using www.random.org.

The names of the School Principal, address and contact details were noted. Letters of recruitment (Appendix 3), consent forms (Appendix 5), and information leaflets (Appendix 4), along with stamped, addressed envelopes were posted to the 20 selected Irish primary schools, outlining the purpose of the study and the inclusion/exclusion for interested teachers. These letters were followed-up by a phone call to the School Principal, one week later.

Participants agreed on a suitable date, time and location for the focus group, and were encouraged to read the information leaflet prior to attending. A reminder phone-call was made to all participants two days preceding the interviews in an attempt to ensure full attendance.
4.5 **Question Development:**
Secondary to an extensive literature review, questions fitting to this study’s purpose were developed by the researcher.

Two pilot studies were conducted prior to the official focus groups. Two peers of the Moderator agreed to examine the questions for their suitability. Once deemed appropriate, a trial focus group composing of four Year 4 physiotherapy students was also undertaken. This allowed the novice researchers to practice the sequence of the questions and test the equipment to be used in the study focus group, as recommended by Kezar (2000).

4.6 **Data Collection:**
Three focus groups were carried out in three separate locations during the month of December, 2010.

The interview organisation followed that outlined by Krueger (2000). An introduction detailing the role of the Moderator and Assistant Moderator was declared at the beginning of the discussion (Krueger, 1998a). The Moderator posed the questions, and facilitated the discussion (Krueger, 1998c). She intervened only to clarify issues and probe participants that were less active in the discussion than others (Krueger and Casey, 2000). A series of open-ended questions were posed (Krueger, 2000) and the discussions lasted between approximately 30-40 minutes. Each session was audio recorded with the dictaphone equipment. The sequence of questioning included an opening, transitional, key and closing questions, to facilitate discussion (Appendix 2). Participants were seated in a circle with the moderator located within the group and the assistant moderator seated on the periphery, as recommended by (Krueger, 2000).

Throughout the interviews, it was the role of the Assistant Moderator to note any key quotes, themes, the order of speakers, and significant non-verbal behaviour while capturing the statements of the participants (Kidd and Parshall, 2000).

Krueger (1994) suggests continuing with running focus groups until a clear pattern emerges and subsequent groups produce only repetitious information (theoretical saturation). Each participant was provided with a detailed information package designed in correlation with the topics being discussed, (Appendix 6).
4.7 Data Analysis:
Audio readings were transcribed verbatim (Dey, 1993), using Jefferson notation (Atkinson and Heritage, 1999). Participants’ names were coded using a number system to respect anonymity (Abrams, 2001). Transcripts were read line-by-line and each audio recorder was listened to on numerous occasions for familiarity of contents (Krueger, 1998b). Each line of the transcript was numbered (Rabiee, 2004) and re-read multiple times to ensure further immersion into the results, as outlined by Braun and Clarke (2006). Data was coded by identification of significant concepts that materialised across the groups (Dey, 1993). An important matter with focus groups is determining if an issue constitutes a theme or merely a strongly held point of view (Kidd and Parshall, 2000). Therefore, concepts were grounded into themes, secondary to their frequency (the number of times a theme emerged), extensiveness (the number of participants mentioning a theme) and intensity (emotion expressed in relation to a theme) across all interviews, as recommended by Krueger (1998a). Subsequent member checking via letter (Appendix 7) confirmed rigour of the final themes (McMillan, 2009).

4.8 Participant Information:
Details of the participants are given in (Appendix 1). The teachers had between 0-5 years of teaching experience in both mixed and single-sex Irish primary schools. This ensured a disparity in the experiences and views of individuals, thus enhancing rigour (Mays and Pope, 1995)
5. Results:

5.1 Group Dynamics:
Although the main source of data analysis was the recorded spoken language derived from the interview, Rabiee (2004) recognise how reflection about the interview dynamics, the settings and capturing the non-verbal communication expressed by the group members adds a valuable dimension to the construction and analysis of data.

GROUP A:
One participant was particularly dominant and most forthcoming with information. Her opinions formed the main conversation as the other three participants were slower to voice their ideas. Although probes were used by the Moderator to encourage the other participants to share their opinions, it was thought that very little discussion would have been generated without the input of the dominant participant. During the interview, there were regular pauses and gaps in conversation, which may have indicated the lack of confidence of the participants in the topics discussed. This interview took place in the school setting, directly after school hours. These environmental and time factors may have contributed to the inconsistency of conversation among the participants (Duggleby, 2005).

GROUP B:
Group B differed as only one participant was present in this interview. This limited a conversation style interview, as suggested by Krueger (1998a), however the participant was very passionate and positive about the topic and provided some valid points. This was also evident from her tone of voice and lively body language.

GROUP C:
Group C was the most balanced group with all three participants contributing equally to the discussion. Also, this interview took place in a setting outside of the school at a later time in the day. These environmental factors may have contributed to the fluidity of conversation, (Vicsek, 2010).
5.2 Main Findings:
Subsequent to thematic analysis, three main themes emerged. Each theme composed of subthemes (illustrated in Figure 1) depicting the level of awareness that school-teachers have of Developmental Co-ordination Delay (DCD), in children. These subthemes will be displayed as citations from the transcripts, with the group letter and participant number alongside each quotation e.g. group B, participant 1: Group B, 1.
School-teachers’ awareness of Developmental Co-ordination Disorder (DCD) in children

1) Facilitators/Barriers to understanding
   - Lack of familiarity of term ‘DCD’.
   - Information in college.
   - Enthusiasm to learn.

2) Experience
   - Incidence of child in classroom.
   - Number of years qualified.

3) Perceptions of role/responsibility in identification
   - Parents.
   - Lack of opportunity.
   - Use of Physical Education.
   - Resource teacher.

5.3 Figure 1: Main Themes and Sub-themes.
5.4 Facilitators/Barriers to understanding:

Unfamiliarity with term ‘DCD’ but awareness of term ‘Dyspraxia’:
All teachers consistently lacked familiarity and awareness of the term Developmental Co-ordination Delay (DCD).

‘No I haven’t heard of it’, (Group C, 1),

‘I don’t think so, no’ (Group B, 1),

‘We wouldn’t really hear of it’, (Group A, 2)

‘I think it’s kind of a new disorder...so it is only being recognised in the last few years’ (Group C, 1).

The teachers did not make an immediate link between DCD and Dyspraxia. However, when probed, they displayed a definite awareness and familiarity of the term, ‘Dyspraxia’

‘Dyspraxia is mentioned more’ (Group A, 1),

‘Yeah, (emphasis) yeah definitely yeah’, (Group B, 1)

The majority of teachers had the ability to define broad ‘telling signs’ of a child with DCD/Dyspraxia:

‘Child not properly developed’, (Group A, 1)

‘Their ability to just sit in the chair...and walking into things that are nowhere (emphasis) near them’, (Group B, 1)

‘Being really (emphasis) clumsy all the time’ (Group C, 2).
While a minority of teachers were more precise and accurate in their descriptions:

‘Attention span seems to be less’, (Group C, 1),

‘Their organisational skills, balance and that would be poor’ (Group A, 1)

‘They’d also be a bit awkward with pencil-grip and beading’, (Group B, 1)

Most teachers were quite inaccurate and extensively lacked confidence in the ‘telling signs’ of DCD that they voiced:

‘That’s what it would mean to me anyway ↓ ’ (Group A, 3)

‘I suppose just from what I have been told, as I’m still relatively new to all of these disorders...balance is completely off?’ (Group C, 2).

‘Whereas I’m totally not in tune with Dyspraxia so I wouldn’t be looking out for it’, (Group C, 3)

‘But then again I’m not 100% sure if this is a symptom’ (Group C, 2)

**Lack of information provided during college training:**
All teachers expressed their dissatisfaction regarding the amount of information provided to them on developmental delay during college training. This theme ran extensively throughout all groups and was discussed frequently and with intensity.

‘I don’t think we were ever given advice on how to deal (emphasis) with the children if we ever encountered them’, (Group A, 4).

‘I don’t remember there being any specific lectures or training in that area when I was in college, (Group B, 1).
‘You’d probably get as much info from an internet website...it wasn’t really I don’t think teacher-related’, (Group A, 2)

‘I never heard of it in college’, (Group C, 1).

**Enthusiasm to learn:**
The majority of teachers realised the gap in their understanding of DCD, requiring them to carry out self-directed learning to improve their understanding. They expressed intense desire and enthusiasm in becoming more informed of developmental delay:

‘It’s something you definitely have to do a lot of work yourself or research work yourself, if it does present itself in your class’, (Group B, 1)

‘I’d even love to go back now and really listen and find out’, (Group A, 1)

‘Even just talking about this now, I realise I’d really love to learn much more about this and what signs to look out for and what to assess’ (Group C, 1)

‘You have to educate yourself...it’s up to you (emphasis) to look into things’, (Group A, 2).

‘Well I would try and find out the particular strategies we should try and implement into the classroom for the child’, (Group C, 1).
5.5 Experience:

Teachers rely on experience of having children with ‘DCD’ in classroom in order to develop awareness and knowledge.

Incidence of child in the classroom:

All teachers consistently linked their knowledge of DCD back to a child that they had observed or encountered within the school. In most cases, teachers only become aware of a child having developmental delay during or after the time the child presented in the classroom:

‘I’ve just noticed one boy who has Dyspraxia in our school...he can’t stand in one place for a while without moving all over the place’, (Group C, 3).

‘Just another boy in the school, all the teachers in the school just observed him...Dyspraxia is definitely evident now from his balance’, (Group C, 1).

‘You can think of a child that you could link that with’ (Group B, 1)

‘I had a child last year...we just thought he was more awkward than anything’ (Group A, 3)

‘I keep basing my opinion on that 1 child that I had before and it wasn’t even definite that she did have Dyspraxia... ‘I’m just talking about what I’ve learned from this particular girl’, (Group C, 2).

‘Our knowledge is poor until you come across the situation yourself’, (Group A, 4).

Number of years qualified:

Teachers who had fewer years of teaching experience displayed less knowledge and accuracy than those who had been teaching for a longer time.
‘I’ve never really come across a child with Dyspraxia so I don’t know like...they could be just different symptoms altogether?’ (Group C, 1).

‘Because last year was my 1st year out [of college] so I didn’t really have that much experience and I’m still relatively new to all of these disorders’, (Group C, 3).

‘It was only because I worked in the Special Needs School that I would have become more aware’, (Group C, 1).

‘I would definitely consult more senior members of staff who have more experience in that area’, (Group B, 1).

5.6 Perceptions of role/responsibility in identification:

Teachers are not fully aware of the role they can play in the identification of a child with DCD. Instead, however, they often place the responsibility on other bodies.

Parents:

Teachers in Group A frequently placed the blame for the child’s delay on the parents for being over-protective, thus inhibiting their independence:

‘At the moment I have a boy who is very molly-coddled…the mother is doing everything (emphasis) for him’. (Group A, 3)

‘Some children just aren’t given any independence’ (Group A, 1)

‘Some parents don’t want to know about it at all...they’re in denial about their child’s difficulties’, (Group C, 3)

In addition, teachers felt parents should share the responsibility in identifying when their child may be presenting with developmental delay.

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‘I mean why is it only teachers that should notice these things?..I mean parents spend the most time with the child, so I think they should be made more aware of it’, (Group C, 3).

‘There’s a lack of information out there as well for parents’, (Group A, 2)

**Physical Education:**
The school-teachers extensively recognised the importance of physical activity and physical education classes when identifying children with DCD.

‘The child might have difficulty in P.E’, (Group B, 1)

‘Always I find in P.E, to pair the child up with those who are more able’, (Group A, 1).

‘I might call out a set of [physical] instructions without demonstrating them and they’d follow them, just a means of getting them thinking as well, (Group B, 1).

However, they extensively recognised that classes of physical education were not always optimally used to observe the children’s movement:

‘I think that teachers need to home in on using P.E as a way of observing and developing the child’s fine motor and gross motor skills’, (Group C, 2).

‘I think teachers kind of focus more on just having a game of basketball or a game of football much too often’, (Group C, 1)

**Lack of Resources:**
Most teachers in Groups A and C felt they lacked in time and opportunity to look closely enough and thus identify when a child might have a developmental delay:
'I think it boils down to it would be great to have another person with you helping you with P.E...another set of eyes’ (Group C, 1)

‘You’ve got about 20 other kids that you have to look at’ (Group A, 2)

‘I suppose it’s the belief that they’re not showing any behavioural symptoms like behavioural signs, there’s nothing wrong with them’, (Group C, 2)...Because it doesn’t disrupt the classroom it doesn’t disrupt the learning or the teaching so it might have been overlooked over the years (empathetically)’, (Group C, 1)

‘But even for us if we could have some kind of a tick-list’ (Group A, 4).

‘I just feel I don’t have the time’, (Group C, 3).

In contrast, however, the majority of teachers in Group C empathetically appreciated that timely intervention is vital when identifying a child with DCD:

‘As far as I know, it’s actually really unfortunate that if they don’t get help early then they go onto develop really bad social skills’, (Group C, 1)

‘So it’s crucial to get the help they need when they’re younger because it can prove too late when they’re older (empathetically),’ (Group C, 2).

**Resource Teachers:**

As well as depending on their own experiences of a child with DCD, teachers are also reliant on the knowledge and experience of other bodies. Both frequency and extensiveness were apparent when discussing the need for additional input from experienced professionals, in particular Resource Teachers and other teaching colleagues, to identify a child with developmental delays.

‘It’s always the Resource Teacher or learning support teacher will notice it before we [teachers] do because obviously on a 1:1 basis they would’, (Group A, 1).
‘We have a number of Resource Teachers in the school who would be fairly experienced in that (emphasis) area’ (Group B, 1).

‘We only hear of these things through talking to other teachers and from what comes up in the school’ (Group C, 3).

‘She had two Resource Teachers and they were ahead of all of this’, (Group A, 1). ‘Our Resource Teacher is excellent in that (emphasis) area’, (Group C, 1).
6. **Discussion**

6.1 School-teachers’ awareness:

The results of this study reveal the low awareness of Developmental Co-ordination Delay (DCD) that exists among Irish school-teachers. Although elements of awareness of Dyspraxia are evident, the majority of teachers lacked a rich understanding and knowledge of DCD. Responses such as ‘I’m not 100% sure’, and ‘I wouldn’t be in tune with DCD’ combined to highlight the lack of certainty and confidence that teachers have in this area of developmental delay.

Previous studies examining the knowledge that school-teachers demonstrate of DCD brings to light the uncertainty attached to this term. A study by Miyahara and Register (2000), effectively illustrates the confusion and inaccuracy of school-teachers when they were requested to describe three different developmental delays i.e. Clumsy Child Syndrome (CCS), Developmental Dyspraxia (DD) and DCD.

Timely and effective identification of children with DCD relies on a better understanding of teachers’ perceptions of children with motor difficulties, (Rivard et al, 2007).

Despite the clue in the label ‘Developmental Co-ordination Delay’, (Miller et al, 2001) criticise how the term is still poorly defined by teachers. Similarly, the teachers in this study failed to recognise the term DCD, with none of the participants linking DCD with Dyspraxia, until probed by the Moderator. In contrast, a study by Kirby et al, (2005) revealed that 42.9% of teachers use the terms ‘Developmental Co-ordination Delay’ and ‘Dyspraxia’ interchangeably. Thus, proposing that teachers may have varying levels of awareness of developmental delays.

6.2 Factors influencing awareness:

Many factors influencing teachers’ awareness and perceptions of a student with DCD have been hypothesised. These include gender of the child, gender of the teacher, the (disruptive/non-disruptive) behaviour of the child, experience of the teacher, as well as
knowledge of definition and presentation of DCD, which teachers usually attain during their training (Piek and Edwards, 2007 and Peters et al, 2001). This provides us with an interesting insight into the existing awareness that school-teachers may have of a child with ‘DCD’.

Teaching experience proved to be largely influential of the awareness that the participants in this study had of DCD. Missiuna et al, (2006) report that in some cases teachers misinterpret the child’s motor difficulties, while instead blaming the child for lack of performance. Teaching experience seems to be the most common characteristic that teachers rely upon in making their judgments (Brennan-O’Neil and Liljequist, 2002), as experienced teachers know more than, and are different from novices (Kagan, 1992).

Participants reiterated this concept when emphasising how the incidence of experiencing a child in their classroom with DCD brings to light their awareness. However, is it too late by then?

There was a general consensus amongst the participants that the levels of information provided to them during college training, were unsatisfactory and unbeneﬁcial, if information was provided at all. Consequently, many teachers lack knowledge or understanding about individual differences and ways to modify and adapt learning, teaching, and assessment material (van Kraayenoord et al, 2000).

Kirby et al, (2005), highlight the need for training of teachers in this area when they revealed that only 54.3% of school-teachers had a correct knowledge of the term DCD.

A heavy emphasis was placed on the important role of Resource Teachers to instil an awareness of DCD in school-teachers. This may be due to the lack of conﬁdence and preparation that these particular teachers received during college training.

Furthermore, the results of this study showed that these teachers are unaware of the role they can play in the identiﬁcation of children with DCD. Instead, they believe that Resource Teachers are primarily responsible in this identiﬁcation process.

Vaughn & Fuchs, (2003) state that teachers in general education settings appear to be less reliable when providing ratings related to learning disabilities than special education teachers i.e. Resource Teachers. This is reiterated by Mashburn and Henry (2004), who state that “the higher the level of the teachers’ education, the more accurate their ratings”.

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The teachers in this study also referred to the “School-Principal”, “School Psychologist” and “Occupational Therapist” when discussing the identification process of a child with DCD. This again illustrates the false perception teachers may have of their own responsibilities in identifying DCD.

Although much literature recognises the duty of the school-based Occupational Therapist (O.T) when identifying children with DCD (Dunford et al, 2004), there is inadequate service provision in the areas of O.T’s for Irish children with DCD (Sweeney, 2007). Hence school-teachers’ ratings have been found to be the most widely used method for assessing conduct problems in the classroom (Brennan-O’Neill and Liljequist, 2002).

‘Canchild Research’, implemented in Canada (Misiuna, 2003), recognise that physiotherapists (PT’s) are educated and trained in analysing motor skill development and also in determining the ability of a child to cope with the demands and activities of everyday life, which is particularly true of therapists working within school settings (Sugden and Chambers, 2007).

Enhanced communication between school-teachers and these professionals, such as OT’s and PT’s is vital in order to increase overall awareness and knowledge of DCD. This would facilitate a cross-disciplinary approach to the recognition, classification and management of physical awkwardness in children (Miyahara and Register, 2000).

As well as placing responsibility on other professionals, this particular group of school-teachers felt that parents also had a major role to play in the identification of DCD. The teachers reported they would have to be ‘100% sure’ that a child had DCD before communicating with the parent. In contrast however, the teachers felt that parents were obliged to recognise when their child had a developmental delay, and report this problem to the school immediately, in order to ensure timely intervention.

Fox & Lent, (1996) emphasise that although parents know when their child has a problem, they cannot articulate the difficulty clearly enough for professionals, as these professionals similarly lack specific knowledge of the motor learning difficulty.

Moreover, in a study by Maciver et al, (2010), parents reported that teachers themselves lacked an understanding and knowledge of DCD, thereby impacting upon early recognition and access to services for the child, which inhibited communication.
The parents called for an increase in awareness of DCD by all therapy service professionals to aid early recognition and improved treatment. Overall, this illustrates the need for improved communication and collaboration between school-teachers and parents in order to increase global awareness of DCD.

The enthusiasm of teachers to further educate themselves and reinforce their knowledge of DCD was conveyed throughout this study. “An awareness of a term is one thing and knowledge of its meaning is another, with knowledge depending on the training that professionals receive”, (Peters et al, 2001). As recognised by McCall and Craft, (2000), teachers need to be trained in the importance of sensory-motor development of young children in inclusive education, as non-specialist teachers lack expertise and proficiency of this knowledge base. Although teachers may not receive adequate education during college training, they recognise the obligation that they have to inform themselves and continue with self-directed learning in this area of developmental delay, thus promoting efficient identification and prevention of secondary complications for the child.

A study by Piek and Edwards, (1997), revealed that class-teachers could only identify 25% of children with DCD, in contrast to teachers of physical education who were able to identify 49%. This highlights the importance that must be placed on observation of children during physical activity, and within classes of physical education. It has also been reported that educators have largely ignored the physical components of learning; visual, auditory, fine-motor and postural skills, (Scott, 2005). This notion was compounded by the school-teachers in this study who recognised how advantageous having a specific ‘tick-list’ or having ‘an extra set of eyes’ would be during physical education classes. The implementation of these strategies may provide more opportunity to observe and identify children with motor difficulties, such as DCD. Ideally, all primary schools should have a specialist teacher of physical education who has the knowledge and training to identify and support children with motor learning difficulties and their classroom teachers.
7. Methodological Considerations:

A primary limitation in this study was the fact that many interested participants did not meet the inclusion criteria, thus had to be denied participation. As a result, all participants were female, which may have caused a bias on the overall male/female awareness of DCD. According to Sideridis et al, (2008), teachers’ gender significantly biases their identification of learning disabilities with females being more lenient than males. Due to sample limitation, this hypothesis was not clarified.

A total of five school-teachers agreed to participate in Group B however, there were four drop-out participants. Consequently, the ideal number of 5-8 participants in each focus group as suggested by (Krueger and Casey, 2000) was not feasible, with only one teacher participating. This may have caused a reduction in the reliability of the study.

An inherent limitation in focus group research is the low generalisability of the findings. As it is difficult to quantify the degree of representation in a larger population, the transferability of focus groups, in general is problematic, (Vicesk, 2010). Similarly, the results of this study cannot be generalised due to the small sample size employed, (n=8).
8. **Conclusion:**

To the author’s knowledge, this is the first study carried out investigating the awareness that Irish school-teachers have of Developmental Co-ordination Delay (DCD). It is evident that school-teachers are lacking in awareness and knowledge. The factors influencing their levels of awareness including experience, information provided during college training, lack of resources and their appreciation of their own role in identifying a child with DCD must be challenged and enhanced. Irish school-teachers require greater education and knowledge-base in developmental delays, particularly DCD.

Future research could undertake a comparative analysis of the awareness and perceptions that school-teachers and parents have of developmental delays could be performed. This would allow a clear comparison of the role that teachers and parents believe themselves to play in the intervention of DCD, while also exploring the gaps in the knowledge that’s available.

Focus must also be placed on ensuring the effective education of school-teachers on the topic of developmental delays. Partnerships between school-teachers and professional bodies that specialise in this area, such as Physiotherapists and Occupational Therapists may well facilitate timely identification and intervention for the child and their family, preventing further difficulties in later life.
9. References:


32. Missiuna, C., Rivard, N. and Pollock, N., (2004), They’re Bright but Can’t Write: Developmental Coordination Disorder in school-aged children; Teaching Exceptional Children Plus, 1; 1.


36. Netelenbos, J.B., (2005), Teachers’ ratings of gross motor skills suffer from low concurrent validity, Human Movement Science, 24; 1,116-137


10. Appendices:

Appendix 1: Participant Information:

<table>
<thead>
<tr>
<th>PARTICIPANT CODE: (Group; Participant)</th>
<th>AGE:</th>
<th>GENDER:</th>
<th>NUMBER OF YEARS QUALIFIED</th>
<th>TEACHING EXPERIENCE TO DATE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>23</td>
<td>F</td>
<td>3</td>
<td>Snr Infants mixed x 2 years; 3rd class girls x 1 year</td>
</tr>
<tr>
<td>A2</td>
<td>26</td>
<td>F</td>
<td>5</td>
<td>1st class girls; 4th class girls, Jnr Infants mixed x 2 years; Snr Infants mixed x 1 year</td>
</tr>
<tr>
<td>A3</td>
<td>24</td>
<td>F</td>
<td>3</td>
<td>Snr Infant mixed x 3 years.</td>
</tr>
<tr>
<td>A4</td>
<td>23</td>
<td>F</td>
<td>3</td>
<td>Snr Infants mixed x 1 year; 3rd class girls x 2 years</td>
</tr>
<tr>
<td>B1</td>
<td>25</td>
<td>F</td>
<td>4</td>
<td>5th class mixed x 1 year 1st class mixed x 1 year; Jnr/Snr Infants mixed x 2 years</td>
</tr>
<tr>
<td>C1</td>
<td>22</td>
<td>F</td>
<td>2</td>
<td>3rd class mixed; 1st class mixed.</td>
</tr>
<tr>
<td>C2</td>
<td>30</td>
<td>F</td>
<td>4</td>
<td>1st/2nd class mixed x 2 years; 5th/6th class mixed x 1 year; 3rd/4th class mixed x 1 year</td>
</tr>
<tr>
<td>C3</td>
<td>24</td>
<td>F</td>
<td>2</td>
<td>1st/2nd class mixed x 2 years.</td>
</tr>
</tbody>
</table>
Appendix 2. Questioning Route for Focus Group:

| Opening (Moderator) | • General overview of study and focus groups declared.  
|                     | • Reiterated that all opinions are valid with no ‘right or wrong answers’  
|                     | • Participants reminded of the anonymity and confidentiality regarding all issues discussed  
|                     | • Ground rules regarding the use of mobile phones and not interrupting fellow participants were outlined. |
| Introductory (Moderator) | • Please introduce yourselves and tell us what teaching experience you have: how many years you have been graduated for and what classes you have taught during this time. |
| Transition (Moderator) | 1. Have you heard of the term Developmental Co-ordination Delay, (DCD)?  
|                         | a. What does this term mean to you?  
|                         | b. No→ Have you heard of the term Dyspraxia? |
| Key (Moderator) | 2. What do you believe would be the ‘telling signs’ for a child with Developmental Co-ordination Delay?  
|                 | 3. Have you ever identified/suspected a child in your class as having DCD? |
4. What kinds of measures might you take if you suspected that a child in your class had DCD?

5. Do you think that children have problems in areas other than those that you have mentioned that would influence your deciding if they had DCD?  
   → Behaviour types

6. If so, do you think that you as a teacher notice these problems?

7. In your opinion is Developmental Co-ordination Delay a problem experienced more commonly by boys or girls?

8. When and where did you first become aware of DCD/Dyspraxia?

9. Did you feel that this information was sufficient/beneficial to you?

| (Moderator) | 10. Do you feel that it would/does make a difference to your class and teaching if your class included a child with DCD or Dyspraxia?  
   > How and Why? |
|-------------|--------------------------------------------------|

**Closing (Moderator)**

- To summarise, is there any additional points that you would like to add to teacher’s awareness of Developmental Co-ordination Delay, in children.
| General Probes               | • Does everyone agree with that point?  
|                            | • Does anyone have anything further to add?  
|                            | • Could you elaborate on  
|                            | • Anybody else have similar or different experiences? |
Appendix 3: Letter to School Principal

University of Limerick

Dear Principal,

We are Final Year Physiotherapy Students in the University of Limerick. As part of our final year we are completing a research project, titled “The Awareness of School-teachers of Developmental Co-ordination Disorder (DCD), and the Perceptions of its Presentation in Children; Primary School-Teachers Knowledge of Different Aspects of Motor Skill Development in Children”. We are currently recruiting primary school teachers to participate in this study. In particular, we are looking for:

- Primary school teachers, male or female, who are recently qualified, with a maximum of five years teaching experience.
- At least one year teaching experience of senior infants or first class students.

Primary school teachers will be excluded from the study for the following reasons:

- Teachers who have had any additional training in the area of motor skill development or developmental coordination disorder.
- Teachers who have more than five years teaching experience.
- Teachers who do not have experience teaching senior infants or first class.

As outlined in the information leaflet, an audio-recorded discussion group will take place, where participants will be asked to discuss two separate research questions, for approximately 90 minutes in total. All data collected will remain confidential and will be non-attributable to the participating schools and teachers.

We would appreciate if you would inform any teachers in your school of our research project and provide them with the information leaflet and a consent form attached. Also included is a stamped addressed envelope. We would be very grateful if any eligible and interested teachers in your school could return the consent forms to you, and you could forward them to us in the provided envelope. A follow-up phone call to your school will take place within 1 week of receiving this letter.

Thanking you in advance for your participation in our research.

Kind regards,

______________________________  ______________________________
Denise O’Riordan                                                                 Tricia Murphy
Appendix 4: Information Leaflet

The researchers:
Denise O’Riordan and Tricia Murphy are Final Year Physiotherapy Students in the University of Limerick. As part of the Final Year it is necessary to undertake a research project. The project will be supervised by their lecturer Dr. Amanda Connell.

If you require any further information before deciding, please do not hesitate to contact Dr. Amanda Connell at 061202958 or via e-mail at amanda.connell@ul.ie.

If you have concerns about this study and wish to contact someone independent, you may contact The Chairperson of the EHS Faculty Ethics Committee, Prof. Alan Donnelly, PESS Dept, University of Limerick.

ALL INFORMATION IS KEPT STRICTLY CONFIDENTIAL AND ONLY USED FOR THE PURPOSES OF THIS PROJECT

The project has full ethical approval from the University of Limerick Faculty of Education and Health Sciences Research Ethics Committee.

Thanks for taking the time to read this leaflet.

University of Limerick

The Awareness of School-teachers of Developmental Co-ordination Delay (DCD), and the Perceptions of its Presentation in Children &

Primary School-Teachers Knowledge of Different Aspects of Motor Skill Development in Children

A final year research project by University of Limerick students:

Tricia Murphy
Denise O’Riordan
What does the project involve?

- This research project is being carried out in an attempt to explore the awareness and knowledge of primary school-teachers on the topics of Motor skill development, as well as Developmental Co-ordination Delay (DCD) in children.

- The project involves a group discussion with approximately six primary school teachers and is carried out by the researchers, Denise O’Riordan and Tricia Murphy, along with the supervision of their lecturer, Dr. Amanda Connell. The first researcher, Denise O’ Riordan will be investigating the school teacher’s awareness of DCD and the perceptions of its presentation in children. The second researcher, Tricia Murphy, will be investigating primary school teacher’s knowledge of different aspects of motor skill development in children.

- The discussion will take place outside of school hours, at a time and location that ensures the teachers are best facilitated. The discussion will take a maximum of ninety minutes and will be audio-taped from beginning to end.

What are the benefits of your participation in this study?

- The information provided by you during the project will be used to gain an insight into school-teachers’ knowledge and awareness regarding Developmental Co-ordination Delay (DCD) and motor development in children.

- An information pack on DCD will be provided to the teachers at the end of the discussion.

What are the risks?

- There are no extra risks compared to any other discussion group.

- If a participant is unhappy with disclosed information during the project, they can stop at any time during the project, without giving any reason.

Who else is taking part?

School-teachers who have graduated in the past 5 years or less, and who have at least one year experience of teaching children in Senior Infants or 1st class are being invited to take part in the project.

What happens to the information?

- This is a research project and there are strict rules regarding those who have access to the disclosed information and results.

- The results of the project will be used but information on individual participating school-teachers will remain confidential at all times.

- The results of the project will add to the existing literature on this topic.

What to do?

If you are eligible to partake and interested, please fill in and sign the “consent form” and return it to the Principal as soon as possible.

The project works on the basis of volunteers. If you do not wish to take part in this project, thank you for taking the time to read this leaflet.

What happens if I change my mind during the study?

All participants are free to change their mind or drop out of this study at any time. If you may wish to do so, please contact one of the researchers to inform us of your decision.
Appendix 5: Consent Form

Informed Consent Form:

The Awareness of School-teachers of Developmental Co-ordination Delay (DCD), and the Perceptions of its Presentation in Children; Primary School-Teachers Knowledge of Different Aspects of Motor Skill Development in Children

Please read the following questions and tick the boxes that you agree with:

<table>
<thead>
<tr>
<th>Statements</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have read and understand the subject information sheet.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I understand the purpose of this study and what the results will be used for.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am aware of how the study will be carried out, and the potential risks and benefits of the study.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know that my participation is voluntary and I am free to withdraw from the project at any stage that I wish, without giving any reason.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I trust that all information that I enclose throughout the study will be used and stored in a confidential manner at all times.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The researchers conducting this study are Tricia Murphy and Denise O’Riordan. If you have any questions or queries before you sign this form, or at a later stage, please do not hesitate to contact: Amanda Connell@staffmail.ul.ie.

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th>BLOCK CAPITALS</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Researcher:</td>
<td></td>
<td></td>
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</table>
INFORMATION PACKAGE
The Awareness of School-teachers of Developmental Co-ordination Delay (DCD), and the Perceptions of its Presentation in Children & Primary School-Teachers Knowledge of Different Aspects of Motor Skill Development in Children

Designed by Final Year University of Limerick Physiotherapy Students

Denise O’Riordan
&
Tricia Murphy
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<td>7 &amp; 8</td>
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<tr>
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<td>9</td>
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<td>References</td>
<td>10</td>
</tr>
</tbody>
</table>
DEVELOPMENTAL COORDINATION DELAY (DCD)

Children with DCD are estimated to represent 5-6% of the school-aged population. DCD is defined by the American Psychiatric Association (APA) by the following criteria as below:

A. Performance in daily activities that require motor coordination is substantially below that expected given the child’s age and intelligence. This is marked by delays in achieving motor milestones (e.g. walking, crawling, and sitting), dropping things, “clumsiness,” poor performance in sports, or poor handwriting.

B. These delays may interfere with the child's academic achievement or activities of daily living.

C. The disturbance is not because of a general medical condition.

TYPICAL MOTOR MILESTONES

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Milestones</th>
</tr>
</thead>
</table>
| 1-2         | - Walks unaided  
             | - Kneels and crouches down to pick up objects  
             | - Pushes ball with foot  
             | - Jumps over small objects  
| 2-3         | - Rides tricycle for at least 2 meters  
             | - Buttons series of three or four buttons  
| 3-4         | - Brushes teeth without assistance  
             | - Puts on socks correctly  
| 4-5         | - Walks up and down stairs, alternating feet  
             | - Zips jacket zipper independently  
             | - Independent in toileting (tearing paper, washing hands, managing clothes)  
             | - Fastens all fasteners  
             | - Cuts paper along a line with scissors  
             | - Ties and unties knots  
| 5-6         | - Dresses independently  
             | - Bathes or showers without assistance  
             | - Catches small ball when thrown from a distance of 10 feet  
             | - Rides bicycle without training wheels  
             | - Cuts complex shapes with scissors  
             | - Ties shoelaces independently  
| 6-8         | - Use fork, spoon and knife competently  
             | - Makes own bed when asked  
             | - Skips  |
Motor development is the changes that occur in our ability to move over the lifespan. It also includes the processes and the factors that underlie these changes in movement ability.

Cognitive, affective, motor and physical are components of motor development. These components are all interlinked, as illustrated below. Each factor influences the other factor. For example, has your performance in a written exam (cognitive component) ever been influenced by your emotional state (affective component)?

**Cognitive:** Human intellectual development
- Reading
- Problem-solving in Maths

**Affective:** Social and emotional aspects of human development
- Feelings of self-worth
- Ability to interact with peers in the class

**Motor:** Development of human movement and factors that affect development
- Handwriting ability
- Movement technique
- Level of maturity in running, throwing and jumping
- Rhythmic ability in dance activities

**Physical:** Bodily types of change
- Increase in the weight of the child
- Increase in the height of the child
- Range of motion at the joints
- Fitness levels or cardiovascular endurance
TYPES OF MOTOR SKILLS

**Gross motor skills:**

Gross motor skills are controlled movements by the large muscles or muscle groups. One relatively large muscle group, for example, is in the upper leg. The muscles in the upper leg are important for producing an array of movements, such as walking, running and skipping.

**Fine motor skills:**

Fine motor skills are movements mainly controlled by the small muscles or smaller muscle groups in the human body. Movements performed by the hands are considered fine movements because the smaller muscles of the fingers, hands and forearms are critical to the production of finger and hand movements. Examples of fine movements include drawing, sewing, typing or playing an instrument.

**Additional Information:**

- **Manipulation**, or use of the hands, is a very important aspect to fine movement. Manipulation can involve intrinsic or extrinsic movements. Intrinsic movements refer to the coordination of the individual digits of the hand in order to manipulate an object already in the hand. Extrinsic movements involve the management of an object that is already in the hand.

- A combination of gross motor movements and fine motor movements are important in some tasks, for example, throwing. The large muscles of the shoulder and the legs contribute to the desired accuracy of the movement, i.e. the distance and strength of the throw. The smaller muscles of the wrist and fingers are important for optimal precision of the movement, i.e. hitting the target. The degree of fine motor control is a good indicator of movement ability or perfection.

- As a child matures, the fine components of a skill become increasingly significant and defined.
HOW DO COORDINATION DIFFICULTIES OCCUR?

There is no simple answer to this question since motor coordination difficulties may arise for many reasons. Problems can occur at a number of different stages as we process information and use it to perform skilled movement. We are constantly receiving information from our environment through various senses (see Figure 1).

**Process 1:** The first possibility is that the child may experience difficulty interpreting and integrating the information that is being received through vision, touch, balance, and the position of joints or the movement of muscles.

**Process 2:** A second possibility is that the child has difficulty choosing the type of motor action that is appropriate for that situation. In order to select an action, a child must consider the context in which the action takes place (e.g., a child approaching a curb has to figure out that stepping up is kind of like climbing stairs).

**Process 3:** A third possibility is that the child may have difficulty forming a plan of action in the correct sequence. The child must organize the motor requirements of the task into a sequence of commands that tell the muscles how to perform the required action (e.g., when the child approaches a set of stairs, he or she must shift weight onto one leg before lifting the other).

**Process 4:** Finally, the message that is sent to the muscles must specify the speed, force, direction and distance that they are to be moved. When the child needs to move or to respond to something else that is changing in time or space (e.g., in order to catch or hit a moving ball), these messages must also change. A child may have difficulty monitoring this information or modifying the messages in order to guide and control the movement while it is taking place.

*Figure 1*
CHARACTERISTIC FEATURES OF A CHILD WITH DCD

When describing children with DCD, it is important to recognize that they are a very mixed group. Some children may experience difficulties in a variety of areas while others may have problems only with specific activities. The following is a list of some of the more common characteristics that may be observed in a child with DCD.

😊 The child may have difficulty balancing the need for speed with the need for accuracy. For example, handwriting may be very neat but extremely slow.

😊 The child may have difficulty with academic subjects such as mathematics, spelling, or written language which require handwriting to be accurate and organized on the page.

😊 The child may have difficulty with activities of daily living (e.g., dressing, using a knife and fork, folding clothes, tying shoelaces, doing up buttons and zippers, etc.).

😊 The child may have difficulty completing work within a normal time frame. Since tasks require much more effort, children may be more willing to be distracted and may become frustrated with a task that should be straightforward.

😊 The child may have general difficulties organizing his/her desk, locker, homework, or even the space on a page.

If a child in your class exhibits any number of the above characteristics, and if these problems are interfering with the child's ability to participate successfully in school or on the playground, then it is important to discuss the matter with the parent or guardian and recommend a referral to the family GP or appropriate services that are available in your area.
### CHARACTERISTIC FEATURES OF A CHILD WITH DCD

<table>
<thead>
<tr>
<th>PHYSICAL</th>
<th>BEHAVIOURAL/EMOTIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>» The child may appear to be clumsy or awkward in his/her movements. She/he may bump into, spill, or knock things over. The child may experience difficulty with gross motor skills (whole body), fine motor skills (using hands), or both.</td>
<td>» The child may appear to be uninterested in, or to avoid, particular activities, especially those which require a physical response. For a child with DCD, motor skills are very difficult and require more effort. Repeated failure may cause the child to avoid participating in motor tasks.</td>
</tr>
<tr>
<td>» The child may have difficulty with printing or handwriting. This skill involves continually interpreting feedback about the movements of the hand while planning new movements, and is a very difficult task for most children with DCD.</td>
<td>» The child may experience secondary emotional problems such as low frustration tolerance, decreased self-esteem, and lack of motivation due to problems coping with activities which are required in all aspects of his/her life.</td>
</tr>
<tr>
<td>» The child may be delayed developing certain motor skills such as tricycle or bike riding, ball catching, handling a knife and fork, doing up buttons, and printing.</td>
<td>» The child may avoid socializing with peers, particularly on the playground. Some children will seek out younger children to play with while others will go off on their own. This may be due to decreased self-confidence or avoidance of physical activities.</td>
</tr>
<tr>
<td>» The child may show a discrepancy between his/her motor abilities and his/her abilities in other areas. For example, intellectual and language skills may be quite strong while motor skills are delayed.</td>
<td>» The child may seem dissatisfied with his/her performance (e.g., erases written work, complains of performance in motor activities, and shows frustration with work product).</td>
</tr>
<tr>
<td>» The child may have difficulty learning new motor skills. Once learned, certain motor skills may be performed quite well while others may continue to be performed poorly. The child may exhibit poor balance and/or may avoid activities which require balance.</td>
<td>» The child may be resistant to changes in his/her routine or in the environment. If the child has to expend a lot of effort to plan a task, then even a small change in how it is to be performed may present a large problem for the child.</td>
</tr>
<tr>
<td>» The child may have more difficulty with activities that require constant changes in his/her body position or adaptation to changes in the environment (e.g., baseball, tennis or jumping rope).</td>
<td></td>
</tr>
<tr>
<td>» The child may find activities that require the coordinated use of both sides of the body difficult (e.g., cutting with scissors, stride jumps, swinging a bat, or handling a hockey stick).</td>
<td></td>
</tr>
</tbody>
</table>
CONCLUSION

Teachers and parents who are with a child every day may be the first to notice the functional difficulties that the child is experiencing. It is important for the child to be examined at an early age in order to rule out other medical reasons for the clumsiness. Children with DCD who are not recognised may experience failure and frustration, are often perceived to be lazy or unmotivated, and may develop secondary complications such as learning difficulties, emotional, social and behavioural problems.

EARLY IDENTIFICATION AND INTERVENTION ARE KEY TO SUCCESS
REFERENCES


Appendix 7: Member Checking Letter:

Dear __________,

Once again I would like to thank you for your participation in my Final Year Project titled ‘School-teachers’ awareness of Developmental Co-ordination Delay (DCD) in children’. I have attached a preview of the major themes and subthemes that emerged from the three focus groups conducted last semester. The themes are highlighted in black with supporting quotations shown below in italics. If you would read through the attached word document and ascertain whether you are in agreement with the themes, I would appreciate it. If you have any questions or objections please contact me at: amanda.connell@ul.ie. The purpose of this is to improve validity of the focus group study.

Kind Regards,

Denise O’Riordan,
4th Year Physiotherapy Student, University of Limerick.

School-teachers’ awareness of Developmental Co-ordination (DCD) in children:

Theme 1: Facilitators/Barriers to understanding:

Unfamiliarity with term ‘DCD’ but awareness of term ‘Dyspraxia’:
All teachers consistently lacked familiarity and awareness of the term Developmental Co-ordination Disorder (DCD).

’No I haven’t heard of it’, (Group C, 1),

’I don’t think so, no’ (Group B, 1),

’We wouldn’t really hear of it’, (Group A, 2)

’I think it’s kind of a new disorder...so it is only being recognised in the last few years’ (Group C, 1).

Although, the teachers did not make a link between DCD and Dyspraxia, when probed, they displayed a definite awareness and familiarity of the term, ‘Dyspraxia’
‘Dyspraxia is mentioned more’ (Group A, 1),

‘Yeah, (emphasis) yeah definitely yeah’, (Group B, 1)

The majority of teachers had the ability to define the general ‘telling signs’ of a child with DCD/Dyspraxia:

‘Child not properly developed’, (Group A, 1)

‘Their ability to just sit in the chair...and walking into things that are nowhere (emphasis) near them’, (Group B, 1)

‘Being really (emphasis) clumsy all the time’ (Group C, 2).

While a small number of teachers were more precise and accurate in their descriptions;

‘Attention span seems to be less’, (Group C, 1),

Their organisational skills, balance and that would be poor’ (Group A, 1)

‘They’d also be a bit awkward with pencil-grip and beading’, (Group B, 1)

Most teachers were quite inaccurate and extensively lacked confidence in the ‘telling signs’ of DCD that they voiced:

‘That’s what it would mean to me anyway ↓’ (Group A, 3)

‘I suppose just from what I have been told, as I’m still relatively new to all of these disorders... [the child’s] balance is completely off?’ (Group C, 2).

‘Whereas I’m totally not in tune with Dyspraxia so I wouldn’t be looking out for it’, (Group C, 3)
‘But then again I’m not 100% sure if this is a symptom’ (Group C, 2)

**Lack of information provided during college training:**
All teachers expressed their dissatisfaction regarding the amount of information provided to them on developmental delay in college. This theme ran extensively throughout all groups and was discussed frequently and with intensity.

‘I don’t think we were ever given advice on how to deal (emphasis) with the children if we ever encountered them’, (Group A, 4).

‘I don’t remember there being any specific lectures or training in that area when I was in college, (Group B, 1).

‘You’d probably get as much info from an internet website…it wasn’t really I don’t think teacher-related’, (Group A, 2)

‘I never heard of it in college’, (Group C, 1).

**Enthusiasm to learn:**
The majority of teachers interviewed realised the gap in their understanding of DCD, requiring them to carry out self-directed learning to improve their understanding. They expressed intense desire and enthusiasm in becoming more informed of developmental delay:

‘It’s something you definitely have to do a lot of work yourself or research work yourself, if it does present itself in your class’, (Group B, 1)

‘I’d even love to go back now and really listen and find out’, (Group A, 1)

‘Even just talking about this now, I realise I’d really love to learn much more about this and what signs to look out for and what to assess’ (Group C, 1)

‘You have to educate yourself…it’s up to you (emphasis) to look into things’, (Group A, 2).
‘Well I would try and find out the particular strategies we should try and implement into the classroom for the child’, (Group C, 1).

**Theme 2: Teachers rely on experience of having children with ‘DCD’ in classroom in order to develop awareness and knowledge.**

**Incidence of child in the classroom:**
All teachers consistently linked their knowledge of ‘DCD’ back to a child that they had observed within the school. In most cases, teachers only become aware of a child having developmental delay during or after the time they present in the classroom:

‘I’ve just noticed one boy who has Dyspraxia in our school...he can’t stand in one place for a while without moving all over the place’, (Group C, 3).

‘Just another boy in the school, all the teachers in the school just observed him...Dyspraxia is definitely evident now from his balance’, (Group C, 1).
You can think of a child that you could link that with’ (Group B, 1)

‘I had a child last year...we just thought he was more awkward than anything’ (Group A, 3)

‘I keep basing my opinion on that 1 child that I had before and it wasn’t even definite that she did have Dyspraxia... ‘I’m just talking about what I’ve learned from this particular girl’, (Group C, 2).

‘Our knowledge is poor until you come across the situation yourself’, (Group A, 4).

**Number of years qualified:**
Teachers who had less years of experience teaching displayed less knowledge and accuracy than those who had been teaching for a longer time.

‘I’ve never really come across a child with Dyspraxia so I don’t know like...they could be just different symptoms altogether?’ (Group C, 1).
‘Because last year was my 1st year out [of college] so I didn’t really have that much experience and I’m still relatively new to all of these disorders’, (Group C, 3).

‘It was only because I worked in the Special Needs School that I would have become more aware’, (Group C, 1).

‘I would definitely consult more senior members of staff who have more experience in that area’, (Group B, 1).

**Theme 3: Teachers are not fully aware of their role and responsibility in identifying children with DCD:**

**Parents:**
Teachers in Group A frequently placed the blame for the child’s delay on the parents for being over-protective of the child, inhibiting their independence:

‘At the moment I have a boy who is very molly-coddled…the mother is doing everything (emphasis) for him’. (Group A, 3)

‘Some children just aren’t given any independence’ (Group A, 1)

‘Some parents don’t want to know about it at all…they’re in denial about their child’s difficulties’, (Group C, 3)

In addition, teachers felt parents should share the responsibility in identifying when their child may be presenting with developmental delay.

‘There’s a lack of information out there as well for parents’, (Group A, 2)

‘I mean why is it only teachers that should notice these things?…I mean parents spend the most time with the child, so I think they should be made more aware of it’, (Group C, 3).
Physical Education:

The school-teachers extensively recognised the importance of physical activity and physical education classes when identifying children with DCD.

‘The child might have difficulty in P.E’, (Group B, 1)

‘Always I find in P.E to pair the child up with ones who are more able’, (Group A, 1).

‘I might call out a set of [physical] instructions without demonstrating them and they’d follow them, just a means of getting them thinking as well’, (Group B, 1).

However, they extensively recognised that classes of physical education were not always optimally used to observe the children’s movement:

‘I think that teachers need to home in on using P.E as a way of observing and developing the child’s fine motor and gross motor skills’, (Group C, 2).

‘I think teachers kind of focus more on just having a game of basketball or a game of football much too often’, (Group C, 1)

Lack of Resources:

Most teachers in Groups A and C felt that they lack the opportunities and time to look closely enough and thus identify when a child might have a developmental delay:

‘I think it boils down to it would be great to have another person with you helping you with P.E...another set of eyes’ (Group C, 1)

‘You’ve got about 20 other kids that you have to look at’ (Group A, 2)

‘I suppose it’s the belief that they’re not showing any behavioural symptoms like behavioural signs, there’s nothing wrong with them’, (Group C, 2)...Because it doesn’t disrupt the classroom it doesn’t disrupt the learning or the teaching so it might have been overlooked over the years (empathetically)’, (Group C, 1)
'But even for us if we could have some kind of a tick-list’ (Group A, 4).

‘I just feel I don’t have the time’, (Group C, 3).

However, in contrast, the majority of teachers in Group C empathetically appreciated that timely intervention is vital when identifying a child with DCD:

‘As far as I know, it’s actually really unfortunate that if they don’t get help early then they go onto develop really bad social skills’, (Group C, 1)

‘So it’s crucial to get the help they need when they’re younger because it can prove too late when they’re older (empathetically), ’ (Group C, 2).

**Resource Teachers:**

As well as depending on their own experiences of a child with DCD, teachers are also reliant on the knowledge and experience of other bodies. Both frequency and extensiveness were apparent when discussing the need for additional input from experienced professionals, in particular Resource Teachers and other teaching colleagues, when identifying these children with developmental delays.

‘It’s always that Resource Teacher or learning support teacher will notice it before we [teachers] do because obviously on a 1:1 basis they would’, (Group A, 1).

‘We have a number of Resource Teachers in the school who would be fairly experienced in that area’ (Group B, 1).

‘We only hear of these things through talking to other teachers and from what comes up in the school’ (Group C, 3).

‘She had two Resource Teachers and they were ahead of all of this’, (Group A, 1).

‘Our Resource Teacher is excellent in that (emphasis) area’, (Group C, 1).
Appendix 8: Themes and Quotes:

Barriers/Facilitators to familiarity of DCD:

Lack of familiarity of term DCD:
- ‘We wouldn’t really hear of it’
- ‘I wouldn’t really know’
- ‘Our awareness is poor until you come across the situation yourself’
- ‘I don’t think so, no’
- ‘No I haven’t heard of it’
- ‘But then again, I’m not 100% sure if this is a symptom’
- ‘No’
- ‘Well I suppose the fact that I hadn’t heard of the term DCD shows that there isn’t great awareness there.’
- ‘Whereas, I’m totally not in tune with Dyspraxia so I wouldn’t be looking out for it.’
- ‘I just think that there needs to be more information on it for teachers and more emphasis on it.’
- ‘So yeah, I agree, way more information is needed on what to look out for’
- ‘We’re under informed’
- ‘So yeah, I agree, way more information is needed on what to look out for’
- ‘We’re under informed’

Familiarity with term ‘Dyspraxia’:
- ‘Yeah, yeah,(emphasis) definitely yeah’
- ‘Dyspraxia is mentioned more’.
- ‘Yes’
Lack of understanding:

- ‘Forgetting books’
- ‘Forgetting what page to find’
- ‘Very forgetful’
- ‘Not having their things ready’
- ‘Poor organisational skills’
- ‘Need to have routine set out for the child’
- can’t just stand in one place for a while without moving
- ‘Attention span seems to be less’
- ‘I don’t know if it’s linked or not’
- ‘But then again, I’m not 100% sure if this is a symptom’
- ‘In my own head, I had the idea that Dyspraxia was to do with the child’s physicality rather than their behaviour but maybe they are linked?’
- ‘I don’t really know like’
- ‘I think that it’s kind of a new disorder’
- ‘Dyspraxia is kind of a more new phenomenon so it’s only being recognised in the last couple of years’
- ‘I don’t think a lot of people know as much about it as they know about ADHD’
- ‘The child shouts out, kind of’....But I don’t know if that’s because of Dyspraxia’

Knowledge:

- ‘Clumsiness’
- ‘Walking into objects and other people’
- ‘Difficulty in P.E’
- ‘Pencil-grip’
- ‘Beading’
- ‘Frustration’
- ‘Yeah, I think that clumsy is for me the big buzz word that comes to mind when I hear of the word Dyspraxia.’
- ‘I wouldn’t think they’d be very good at sports and P.E’
- ‘I think they’d find things like P.E difficult’
- ‘their ability to just sit on the chair sometimes’
- ‘They can tend to walk into things that are nowhere near them or that can be easily avoided.’
Lack of training in college:

- ‘Don’t think we were ever given advice on how to deal with the children if we ever encountered them’
- ‘Learning info more for exams more so’
- ‘In college’
- ‘Only a small bit’
- ‘It wasn’t really I don’t think teacher-related’
- ‘It wasn’t given to us in college’
- ‘You’d probably get as much info from an internet website’
- ‘First became aware of ‘Dyspraxia in secondary school, during Home-Ec project’
- ‘I don’t remember there being any specific lectures or training in that area when I was in college’.
- ‘We would have heard of it on college…but I wouldn’t really have understood the term until last year’
- ‘I never heard it in college but I just did the 1 year course in England, where Asperger’s and Autism were mentioned’
- It was only until I worked in Special Needs School that I would have become aware’
- ‘No it wasn’t sufficient at all’

Enthusiasm to learn:

- ‘It’s something you definitely have to do a lot of work yourself or research work yourself, if it does present itself in your class’
- ‘I’d even love to go back now and really listen’
- ‘We as teachers need to know about how to deal with these kids’
- ‘Find out what are the best ways’
- ‘Find out what are the signs to look out for’
- ‘and find out’
- ‘Yeah and learn more’
- ‘It’s up to you to look into things’
- ‘You have to educate yourself’
- ‘Well I would try and find out what particular strategies we should try and implement into the classroom for the child’
- ‘just even talking about this now, I realise that I’d love to learn much more about this and what signs to look out for and what to assess’.
- ‘ I mean I’d love to do a course on this or something but, I know I can, yeah you probably can’
Experience:

Incidence of child in the classroom:
- ‘you can kind of think of the child that you could link that with’
- ‘I’m just taking what I’ve learned from this particular girl,’
- ‘so I’ve never really come across a child with Dyspraxia so I don’t know like’
- ‘The child I had last year’
- ‘The child I have this year’
- ‘The boy I had’
- ‘I keep basing my opinion on 1 child that I had before and it wasn’t even definite that she did have Dyspraxia’
- ‘Even that kid that I mentioned before, he really stands out at break-time as well’.

Number of years qualified:
- ‘I suppose just from what I was told’...‘because I didn’t really have any experience,’, ‘because last year was my 1st year out, so I didn’t really have any experience and I’m still relatively new to all of these disorders’
- ‘As newly qualified teacher, I would be slow to go straight to the parents’
- definitely need to talk to someone more Senior and has more experience in the school’
- ‘I would definitely consult more senior members of staff who have more experience in that area’, (Group B, 1).

Perception of role/responsibility in identification of DCD:

Resource Teachers:
- ‘We’d probably say it to the Resource Teacher’
- ‘it’s always that resource teacher or learning support teacher will notice it before you because obviously on a 1:1 basis, you would’
- ‘If you see it, you’re probably just going to say it to another teacher’.... ‘Maybe a resource teacher’
- ‘We have a number of Resource Teachers in the school who would be fairly experienced...I would speak to them’
- ‘The Resource Teacher might come in and observe the child for a little while in the classroom’
- ‘But I know she did go for testing with an O.T and possibly with S.L.T’
- ‘Personally, I would go to Resource Teacher’
- ‘Our Resource Teacher is excellent in that area’
- ‘She had 2 resource teachers and they were ahead of all of this’.
Parents:

- ‘I mean parents spend the most time with the child, so I think they should be made more aware of it’
- ‘There’s a lack of information out there as well for parents so I mean why is it only teachers that should notice these things?’
- ‘I mean parents spend the most time with the child, so I think they should be made more aware of it’,
- ‘At the moment I have a boy who’s being molly-coddled’
- ‘The mother is doing everything for him’
- ‘Some children just aren’t given any independence’
- ‘And then some parents don’t want to know about it at all’…‘They’re in denial about their child’s difficulties’

Use of Physical Education:

- ‘Always I find in P.E to pair the child up with the ones who are more able’
- ‘Yeah with the stronger children’
- ‘I think teachers need to really hone in on using P.E as a way of observing and developing the child’s fine motor skills and gross motor skills.’
- ‘I think that boils down to it would be great to have another person with you helping with P.E.’
- ‘It would be great to have another set of eyes, maybe a parent, I don’t know’
- ‘Activities in the classroom that we might do that involve movement or in P.E. where we do a lot of movement.’

Lack of Resources:

- ‘I just feel I don’t have the time’
- ‘But even for us if we could have some kind of a tick-list’.
- ‘It would be great to have another set of eyes, maybe a parent, I don’t know’
- ‘Well I would try and find out what particular strategies we should try and implement into the classroom for the child’
- ‘She had 2 resource teachers and they were ahead of all of this’
- ‘You’re not gonna go around after 30 kids tidying up for them’