“AWARENESS AND KNOWLEDGE OF DEVELOPMENTAL COORDINATION DISORDER AMONG PHYSICAL EDUCATION TEACHERS”
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A special thank-you goes to my dissertation tutor Ceinwen Jackson, whose expertises and guidance throughout has been invaluable.
Abstract

The aim of this study was to investigate the awareness of developmental coordination disorder (DCD) among qualified PE teachers based in one locality of the United Kingdom. A questionnaire was designed for the purpose of the study and was distributed to sixty comprehensive schools across the South Wales region. The results of the study indicated a general lack of awareness of DCD among PE teachers (N=31). The majority of PE teachers had not heard of the term DCD, demonstrated a limited knowledge of the condition and restricted ability to recognise adaptable inclusion strategies in PE for children with DCD. The study also revealed that no PE teachers had ever received training relating to DCD or received any special educational needs (SEN) training throughout the duration of one school year. Results indicated that an ability to adapt PE activity for children with DCD was dependent upon a good knowledge of DCD. An independent t-test identified that PE teachers with an awareness of DCD (n=5) demonstrated better knowledge of DCD and ability to adapt PE for children with DCD compared to PE teachers without an awareness of the condition (n=26). The conclusion drawn from the study was that PE teachers lacked an awareness of DCD which may have been caused by a lack of SEN training to prepare PE teachers educate children with DCD. The study proposed that in order to fulfil the Governments objective of an inclusive educational environment for children with DCD, amendments made to the curriculum in teacher training programmes could accommodate PE teacher knowledge and awareness of DCD.
CHAPTER I

INTRODUCTION
1.0 Introduction

The education of all pupils within a Physical Education (PE) environment presents teachers with a range of issues beyond the context of a classroom setting, including the physical nature of the activities, the use of equipment and the dynamics involved in grouping and organising pupils within physical activities (James, 2003). It has been suggested that such issues are exacerbated by the presence of pupils with special educational needs (SEN) (Morley et al., 2005). Jones (2005) explains that the ability of a PE teacher to successfully educate and include children who require SEN in PE is dependent upon an in-depth knowledge and awareness of learning difficulties in children. Developmental coordination disorder (DCD) is a learning difficulty that is estimated to affect six percent of children between five to eleven years of age (Lewis & Norwich, 2005). Research by Kirby et al. (2005) indicates that there is a general lack of awareness of this condition among educational professionals. This raises concern whether children with DCD are receiving an inclusive education (Eckersley, 2004).

1.1 What is Developmental Coordination Disorder?

Kirby (1999) explains that DCD it is a motor planning difficulty that is present from birth, which is associated with a variety of physical, social and psychological problems. Brookes (2007) suggests that DCD is regarded as a “hidden handicap”, since related characteristics sometimes go unnoticed until later years where children are able to compare their motor abilities with other children.

Andrews (2005) highlights the main characteristics of DCD as:

- Difficulty in coordinating movement
- Difficulty with handwriting, throwing and catching
- Difficulty following sequential events
- Misinterpretation of situations
- Having limited social skills and become frustrated
- Having articulation difficulties
1.2 Terminology

Brown (2004) refers to the various names which are used to describe DCD, such as: dyspraxia, minimal brain dysfunction, motor learning difficulty or perceptual motor dysfunction. Polatajko et al. (1995) explains that an international consensus meeting between the American Psychiatric Association and the World Health Organisation was held to debate these different labels, whereby the definition of DCD was accepted by researchers and clinicians. Therefore for the purposes of the following study, the term DCD was used.

1.3 The Cause of DCD

Dixon & Addy (2004) discuss that there are many things that are not understood about the cause of DCD and suggest that there must be more than one cause. Eckersley (2004) highlights that the origins of DCD may be attributed by one of several factors, such as immaturity of the brain as a result of a lack of oxygen to the brain at a crucial period during pregnancy or a viral infection during the fifth week, when a babies nervous system is still beginning to form. Additionally, Eckersley (2004) points out that premature birth may also be a potential cause, influenced by factors such as smoking or poor diet in pregnant women. Investigations into the mechanisms, either neurological or metabolic which cause DCD are still ongoing. (Eckersley, 2004).

1.4 Diagnosis

According to Brookes (2007) DCD is a condition that has been under-recognised for many years by the medical and educational profession. Wilson (2005) discusses that until recently many children with DCD were either misdiagnosed or not diagnosed at all, which meant that those who suffered with the condition were usually dismissed as naughty or clumsy. Eckersley (2004) suggests this is because a general lack of awareness of the condition.
1.5 What is the Problem?

“A lack of awareness of the condition among the general public and even among professionals in the health and education system causes problems for families with a dyspraxic child” (Eckersley, 2004, p.4). Although Portwood (2005) discusses that the awareness of DCD in the teaching profession is relatively new, when compared with other learning difficulties.

Vickerman (2007) explains that the role of a PE teacher to recognise DCD and be able to devise strategies to incorporate children is essential for full inclusion. This is of particular importance since a child’s learning difficulties are most apparent within this area of the National Curriculum (NC) (Doherty, 2004). Therefore, if a PE teacher’s knowledge of DCD is insufficient, then he or she would be unable to fully include children with DCD into PE activities. This is discussed by Jones (2005) who explains that problems arise when teachers do not have the necessary skills to accommodate those with special educational needs. The Government has made this perfectly clear by stating that:

All children have the right to a good education and the opportunity to fulfil their potential. All teachers should expect to teach children with SEN and all schools should pay their part in educating children from the local community, whatever their background or ability. (The Government Strategy for SEN, 2004, cited in Andrews, 2005, p.1)

Through Governmental legislation and revision of the NC, all teachers are now required to provide effective learning for all pupils, including those with SEN. Hence, it is now a legal requirement for PE teachers to be competent in educating children with DCD. However, Kirby et al. (2005), Eckersley (2004) suggest that such requirements are not being met because of an insufficient level of understanding of DCD among teachers. Winter (2006) highlights that successful implementation of policy to include children with SEN into mainstream schools, depends largely on teachers having the knowledge, skills and competencies necessary to make it work.
1.6 Prevalence of DCD

Dixon and Addy (2004) suggest that up to eighteen percent of individuals in the United Kingdom are affected by DCD, which affects significantly more boys than girls. With consideration that a significant number of people are affected by DCD in conjunction with a reported lack of teacher awareness, an enquiry of the awareness of DCD among PE teachers is warranted.

1.7 Previous Research

Leading researchers in the field of DCD such as Kirby et al. (2005) and Portwood (2005), acknowledge that educational professionals lack an awareness and knowledge of DCD. However no studies found have looked at an awareness and knowledge of DCD among PE teachers. Therefore, it is unknown if children with DCD in mainstream schools are receiving the necessary SEN that they may require during PE. The United Kingdoms (UK) Government proposes that there is a growing awareness and knowledge of DCD among school teachers, which has been prompted by the Governments increased emphasis on the inclusion of children in schools with SEN (Dixon and Addy, 2004). The current study aimed to determine an awareness of DCD among PE teachers based in one locality of the UK, through the use of a questionnaire survey.
CHAPTER III

METHODOLOGY
3.0 Methodology

3.1 Participants

Participants consisted of thirty-one PE teachers within the South Wales area. All participants were currently qualified PE teachers from a range of comprehensive schools employed within their profession during the year 2008. The age and gender distribution of the participants mimicked that within the profession.

3.2 Materials

A questionnaire (Appendix B) was devised to establish an awareness of DCD among PE teachers within the South Wales region. The objective of the questionnaire was detailed on the front cover sheet (Appendix A) of the questionnaire. The cover sheet emphasised to the reader that completion of the questionnaire was optional and that respondents could not be identified by the forms. Additionally, the cover sheet provided the reader with the researchers address and contact number so that any further queries regarding the questionnaire could be addressed if necessary.

3.3 Questionnaire Design

The questionnaire consisted of seventeen closed questions, which required participants to tick relevant boxes. The questionnaire was designed to measure four variable measures:

- The knowledge and awareness of DCD among PE teachers
- The ability of PE teachers to adapt PE to accommodate the needs of children with DCD
- The Confidence of PE teachers to teach children with SEN
- The amount of SEN training received by PE teachers
3.4 Rationale for Questionnaire Design

With the exception of one study by Kirby et al. (2005), no research to determine an awareness and knowledge of DCD among teachers was observed. Hence methods of data collection to consider were limited. Kirby et al. (2005) ascertained an awareness and knowledge of DCD among teachers by instructing teachers to provide definitions of the condition. The present study hoped to discover a broader knowledge and awareness of DCD among PE teachers, hence this method of data collection was not considered.

Thomas and Nelson (2001) discuss that questionnaires are advantageous when collecting data from a wide range of participants. Given the wide target range of participants from schools across the South Wales region that data was collected from and the time restrictions of the study, the choice to use a questionnaire to collect the data was the most appropriate method. Closed questions were used to force the respondents into providing an answer according to some criterion. This method was considered to be more appropriate, as oppose to using open ended questions because it is less time consuming and provides control over the nature of the response.

3.5 Pilot Study

Prior to the questionnaires being posted to the various school addresses, the questionnaire was piloted by two qualified PE teachers. The pilot study (Appendix C) consisted of five open ended questions which were designed to test for ambiguity and to evaluate the appropriateness of the survey content. General feedback indicated that the content of the questionnaire was appropriate However one criticism highlighted that question seventeen did not include an option by which PE teachers may receive SEN training “Zero times per year”. Consequently question seventeen was amended to include this option.
3.6 Procedure

Questionnaires were distributed via post to sixty randomly selected Comprehensive schools within the South Wales region. Addressed stamped envelopes were enclosed for respondents to send questionnaires back to the researcher at the given address. The questionnaires were distributed on January 14th 2008 and were collected over a five week period. Questionnaires were intentionally posted at the beginning of the January school term to maximise response rates. Punch (2003) highlights that the timing of survey data collection may affect response rates. It was suggested that PE teachers would be more inclined to respond to the questionnaire at the beginning of a school term, as oppose to the end of a school term with the holiday period imminent.

A follow up letter (Appendix D) was posted to the schools four weeks after the date the questionnaires were sent. The follow up letter was designed to prompt those who had forgotten to respond and encourage non respondents who had not initially planned to return the questionnaire to do so, by reiterating the significance of the study. Further copies of the questionnaire with addressed stamped envelopes were sent with the follow up letter to non respondents to increase the response rate.

3.7 Analysis

A scoring system was designed to provide statistical interpretation of the quantitative data obtained from the questionnaires. A score table (Appendix E) summarised which questions were designed to measure knowledge of DCD, ability to adapt PE, confidence to teach children with SEN and the amount of SEN training received by PE teachers. Additionally, the score table provided a score range in relation to each variable.

A greater proportion of questions were used to determine overall knowledge of DCD because of the overwhelming amount of reported difficulties associated with the condition. Specific questions within the questionnaire were not designed to measure any of the four variables. Such questions were included to obtain an extended understanding of certain questions.
The raw data findings (Appendix F) were analysed using the Microsoft SPSS version 12.0.1 package. This programme allowed the researcher to calculate the mean scores, standard deviation and correlation between the variable measures. The package also allowed the researcher to examine differences between PE teachers who had heard of DCD (n=5) and those who had not heard of DCD (n=26).
CHAPTER IV

RESULTS
4.0 Results

The results obtained were analysed in three parts. The first part analysed the results of confidence in teaching children with SEN, the ability to adapt PE, the knowledge of DCD and the amount of SEN training received by PE teachers. The second part of the results analysed the relationships between the previous variables and the differences obtained between those had heard of DCD and those who had not heard of DCD. The third part analysed specific knowledge of DCD questions.

4.1 Part 1

Table 1. Mean and Standard Deviations Scores for Overall Knowledge of DCD, Ability to Adapt PE and Confidence to teach Children with SEN

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std Deviation</th>
</tr>
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<tbody>
<tr>
<td><strong>Overall Knowledge</strong></td>
<td>10.58</td>
<td>5.84</td>
</tr>
<tr>
<td>of DCD</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Adaptation of PE</strong></td>
<td>1.41</td>
<td>1.50</td>
</tr>
<tr>
<td><strong>Confidence</strong></td>
<td>2.87</td>
<td>0.99</td>
</tr>
</tbody>
</table>

4.11 Overall Knowledge of DCD

The average PE teacher within the present study was able to identify 11 correct responses out a maximum of thirty two. 6% PE teachers within the study were unable to provide any correct responses regarding knowledge of DCD, whilst only two PE teachers scored above twenty correct responses.
4.12 Adaptation of PE

Out of five methods that were adaptable for children with DCD in PE, the average PE teacher within the present study was able to identify one suitable method. 32% of participants were unable to identify any methods for adapting PE for children with DCD. Whilst only 6% of participants were able to correctly identify all five adaptive methods for children with DCD. The standard deviation indicates that scores of overall knowledge among the participants are spread out.

4.13 Confidence

Results indicate that the majority of participants rated their confidence to teach children with SEN as “fairly confident” (2.87). 13% of the participants rated their confidence as “very confident”, whilst a further 13% rated their confidence as “confident”. 19% of rated their confidence as “not so confident”, whilst only 3% rated their confidence as “not confident”.

4.14 Teacher Training

100% of the PE teachers within the present study identified that they had never received any training about DCD. Additionally 100% of the PE teachers indicated that they receive no training in teaching children with SEN throughout the duration of one school year.
4.2 Part 2

Table 2. Correlation (r) and Significance (p) Between Variables

<table>
<thead>
<tr>
<th></th>
<th>Confidence</th>
<th>Adaptation of PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence</td>
<td></td>
<td>r = 0.018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p = 0.31</td>
</tr>
<tr>
<td>Overall Knowledge of DCD</td>
<td>r = 0.12</td>
<td>r = 0.34</td>
</tr>
<tr>
<td></td>
<td>p = 0.51</td>
<td>p = 0.061</td>
</tr>
</tbody>
</table>

4.21 Relationship between Overall Knowledge of DCD and Confidence

The Pearson correlation coefficient test highlighted a very weak positive relationship between overall knowledge of DCD and confidence (r = 0.12), which was not statistically significant.

4.22 Relationship between Overall Knowledge of DCD and Adaptation of PE

The Pearson correlation coefficient test highlighted a moderate to low positive relationship between overall knowledge of DCD and adaptation of PE (r = 0.34), which was not statistically significant.

4.23 Relationship between Confidence and Adaptation of PE

The Pearson correlation coefficient test highlighted a weak positive relationship between confidence and adaptation of PE (r = 0.186), which was not statistically significant.
Have you heard of the term DCD?

![Pie Chart](chart.png)

**Figure 1.** Graph to Show the Results of Question 1

### 4.24 Awareness

Question one asked participants if they had heard of the term DCD. Figure 1 indicates the 84% of participants had “not heard of DCD” and that 16% of participants “had heard of DCD”

**Table 3.** Score Differences between those had Heard of DCD and those who had Not Heard of DCD

<table>
<thead>
<tr>
<th></th>
<th>Awareness</th>
<th>Mean</th>
<th>Std Deviation</th>
<th>Sig.(2tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Confidence</strong></td>
<td>Yes</td>
<td>2.80</td>
<td>1.09</td>
<td>0.427</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>3.19</td>
<td>0.98</td>
<td>0.488</td>
</tr>
<tr>
<td><strong>Adaptation of PE</strong></td>
<td>Yes</td>
<td>3.00</td>
<td>1.87</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>1.11</td>
<td>1.24</td>
<td>0.86</td>
</tr>
<tr>
<td><strong>Overall Knowledge</strong></td>
<td>Yes</td>
<td>15.60</td>
<td>6.80</td>
<td>0.042</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>9.65</td>
<td>5.29</td>
<td>0.134</td>
</tr>
</tbody>
</table>
Table 3 provides an overview of the differences in mean scores for confidence, adaptation of PE and Knowledge of DCD between those who identified that they had “heard of DCD” and those who identified that they had “not heard of DCD”. The results show significant statistical differences in relation to independent variables adaptation of PE and knowledge of DCD, although no significant statistical difference was observed in relation to confidence. PE teachers who had heard of the term DCD scored better in knowledge of DCD and adaptation of PE compared to PE teachers who had not heard of DCD. No such trend was however observed in relation to confidence, as those who had heard of DCD scored lower in comparison with those had not heard of DCD.

4.3 Part 3

Questions 7 – 14 were used to determine knowledge of DCD among PE teachers, which combined together made up “overall knowledge of DCD”. Overall knowledge of DCD provided the researcher with a general perception of PE teacher knowledge of DCD, but failed to provide specific knowledge of the condition. The following section will therefore analyse specific issues of curiosity regarding knowledge of DCD among PE teachers (N=31).

4.3.1 Prevalence

10% of PE teachers were able to correctly identify the range of people DCD affects in the UK. In addition 100% of PE teachers were unable to correctly identify that DCD affects more boys than girls.
Hand eye coordination
Foot eye coordination
Social skills
Mixing with other children
CRF
Self esteem

Figure 3. Percentage of participants who correctly identified DCD Difficulties

4.32 Coordination

61% of PE teachers correctly identified that children with DCD may experience difficulty with hand eye coordination, whilst 58% identified that children with DCD may experience difficulty with eye foot coordination.

4.33 Social Skills

13% of PE teachers correctly identified that children with DCD may experience difficulty with social skills. Whilst only 3% of PE teachers were able to correctly identify that children with DCD may have difficulty mixing well with other children.

4.34 CRF Levels

16% of PE teachers were able to correctly identify that children with DCD may have lower levels of CRF compared to children without DCD.

4.35 Self Esteem
23% of PE teachers were able to correctly identify that children with DCD may experience low self esteem.
6.0 Conclusion

This study set out to examine the reported lack of awareness of DCD among PE teachers. Findings suggested that there is a vague awareness of DCD among PE teachers, which emulated the thoughts of leading researchers in the field of DCD (Kirby et al., 2005; Portwood, 2005). PE teachers with an awareness of DCD (n=5) demonstrated a better knowledge of DCD and ability to adapt PE for children with DCD compared to those without an awareness (n=26), but was still limited. Furthermore, the study identified limited overall knowledge of DCD, ability to adapt PE for children with DCD and confidence to teach children with SEN among PE teachers. The objectives of the study anticipated that these findings would be observed. The study suggested that PE teachers are inadequately prepared to educate children with DCD in PE. This was emphasized by the full complement of PE teachers who reported that they’d received no training in teaching children with SEN.

A relationship (but not statistically significant) was detected between overall knowledge of DCD and ability to adapt PE for children with DCD. This suggested that an awareness of DCD was beneficial for PE teachers.

Considering that six percent of children up to the age of eleven are estimated to have DCD (Lewis and Norwich, 2005), it appears that a significant proportion of children with DCD in mainstream schools are not receiving a PE that takes into account their varied learning difficulties. An inability to make appropriate accommodations for children with DCD may accentuate their movement problems and contribute to their poor self esteem (Schoemaker and Kalverboer, 1994). Governmental legislation proposes that PE teachers are expected to be fully competent in educating children in mainstream schools who require SEN to create an educational system that is equal for all pupils (Jones, 2005). The present study suggested that PE teachers report they are not fully competent to successfully accommodate children with DCD in PE because of a limited awareness and knowledge of DCD.

The underlying cause for a lack of awareness and knowledge of DCD, ability to adapt PE for children with DCD and confidence to teach children with SEN appears to be related to inadequate ITE that encompasses SEN training. Various studies (Morley et al (2005); Winter (2006); Vickerman, 2007) all point out that ITE does not adequately
prepare teachers to include children with SEN in mainstream schools. Vickerman (2007) acknowledges the extent that SEN training is imbedded within the PE training curriculum by pointing out that this element of ITE is optional. The present study therefore recommends that for all PE teachers to develop an improved awareness and skilled understanding of DCD and related adaptation strategies to successfully and confidently teach children with DCD, amendments need to be enforced to ensure that teacher training providers such as the Post Graduate Certificate in Education incorporates compulsory SEN training in ITE. According to Winter (2006) the need for greater SEN input in ITE programmes is also a feeling expressed by trainee teachers themselves. Until such a time when all PE teachers are provided with compulsory SEN training, it is inconceivable how children with DCD can be fully provided with a comprehensive PE that considers their developmental issues. It appears that the Governments plan to create an inclusive education for all is somewhat flawed.

6.1 Limitations

The previous conclusions are limited to the nature of the present study. If the study was to be repeated, a number of modifications could be made to the design of the questionnaire. Question ten asked participants to identify the prevalence of DCD within the UK. To attain this knowledge from PE teachers, a more appropriate method may have been to design this question so that it was open ended. This would have provided the researcher with a more accurate interpretation of the PE teachers’ knowledge.

The pilot study failed to identify that questions twelve, thirteen and fourteen forced participants into providing a response they were uncertain of. Upon reflection, these questions may have more appropriately included an “unsure” option box to more accurately confirm this response. A minority of participants ignored some of these questions. The researcher interpreted that participants who responded this way were unsure.

Through collecting data from only comprehensive schools within the South Wales region, the findings of the study could only be generalised among schools within this
region. A better response rate of returned questionnaires would have given added validity to these findings. If the researcher had been able to collect additional data from PE teachers, it would have been of interest to determine differences in awareness and knowledge between PE teachers who had taught children with DCD and those who had not taught children with DCD.

6.2 Recommendations

Future research to give further validity to these findings could collect data from a broader range of comprehensive schools within the South Wales region or collect data from alternative regions to compare against the present study. Additionally, future researchers may be intrigued to explore differences in awareness and knowledge of DCD between male and female PE teachers.

The design of the present study could be used to ascertain an awareness and knowledge of other learning difficulties among PE/other subject teachers. This would allow researchers to explore differences in awareness and knowledge of learning difficulties among PE teacher/other subject teacher.

The study has clearly created doubt as to whether children with DCD are receiving a PE that takes into account their varied learning difficulties, which may be the result of insufficient ITE. Future research needs to be conducted among ITE providers to more precisely determine the cause for a reported lack of awareness and knowledge of DCD among PE teachers. An examination of the quality and quantity of SEN training to prepare PE teachers to adapt PE for children with DCD would add strength to this study.
The UK Government proposes to establish an educational system that considers the diversity of all pupils (Capel and Piotrowski, 2000). Although Henshaw (2003) acknowledges that constructing a fair educational system that considers all pupils is a process that takes time. With this in mind, it would be of interest to repeat this study in the not too distant future to determine whether or not changes in the educational system reflect changes in awareness and knowledge of DCD among PE teachers.
REFERENCE LIST
Reference List


• Lloyd, M., Reid, G., Bouffard, M. (2006). *Self Regulation of Sport Specific and Educational Problem-Solving Tasks by Boys With and Without DCD*. Adapted Physical Activity Quarterly, **23**, 370 – 369


APPENDIX A

FRONT COVER SHEET
January 14th 2008

You are invited to take part in a study, which consists of completing a questionnaire. Your completion of the questionnaire is entirely voluntary. You do not have to give your name or address. The questionnaire is for PE teachers.

PLEASE READ THE FOLLOWING INFORMATION CAREFULLY BEFORE DECIDING TO COMPLETE THE QUESTIONNAIRE:

Purpose of the Study – The following questionnaire has been designed in order to find out teachers perceptions and knowledge about developmental coordination disorder (DCD). If you decide to take part in the study it will take less than ten minutes to complete. A stamped addressed envelope is enclosed for you to post the questionnaire back to the researcher.

Results – The results of the study will be collated by the researcher as part of completion of final year studies in Sport and Physical Education at the University of Wales Institute Cardiff. The information you provide is confidential and cannot be identified from the forms.

Contact Information – Should you require further information, please contact:

Daniel Griffin
73 Crymlyn Road
Skewen,
Neath
West Glamorgan
SA10 6EG
(Tel – 07854223341)
DEVELOPMENTAL COORDINATIN DISORDER QUESTIONNAIRE
*(See hard copy of questionnaire completed using SNAP)*

Q1 – Have you heard of the term developmental coordination disorder (DCD)?
Please tick ONE box:
YES
NO

Q2 – Have you ever taught a child/children with DCD? Please tick ONE box:
YES
NO
UNSURE

Q3 – If YES, were you made aware of the child’s developmental difficulties?
YES
NO

Q4 – If YES, specify who brought this to your attention? Please tick the appropriate box(s):
A parent/guardian of the child
The child
The head of school
A member of staff
A fellow pupil
Other, please state

Q5 – Please indicate you level of confidence when teaching children with Special Educational Needs (SEN) by ticking ONE box:
Very confident
Confident
Fairly confident
Not so confident
Not confident

Q6 – In your opinion, which of the following can be adapted to make PE more accessible for children with DCD? Please indicate YES, NO or UNSURE for each box:
Modify equipment
Modify the environment
Modify the rules
Modify instruction
Adopt one to one support

Q7 – Please tick the appropriate box(s). DCD is:
A progressive disease
A disorder of coordinated movement
An intellectual difficulty
A hidden handicap
A visible handicap
A condition that affects a child’s gross and fine motor skills

**Q8 – Can you identify from the list below, what difficulties a child with DCD may experience? Please tick ONE from each – AGREE, DISAGREE, UNSURE**
- Hand eye coordination
- Eye foot coordination
- Gross motor control
- Fine Motor control
- Spatial awareness
- Attention to tasks
- Social skills
- Speech problems
- Self esteem

**Q9 – Please provide ONE response in relation to each statement. TRUE, FALSE, UNSURE**
- Children with DCD are said to be less intelligent than other children
- DCD affects more boys than girls
- Children with DCD grow out of the condition as they get older

**Q10 – DCD affects which percentage of the UK population? Please tick ONE box:**
- 1 – 2%
- 2 – 4%
- 5 – 6%
- More than 6%
- Unsure

**Q11 – For each statement, please tick ONE box. Children with DCD:**
- AGREE, DISAGREE, UNSURE
- Trip and fall more than other children
- Are more likely to be distracted than other children
- May seem oblivious to dangers
- Have normal perceptual skills
- Find it harder to remember more than one instruction at a time
- Have no more difficulties with dressing than other children
- Have problems with handwriting
- Can be very emotional and excitable
- Are able to use eating implements normally
- Don’t mix well with other children

**Q12 – Please tick ONE box Only:**
- Children with DCD have lower self perception of athletic competence compared to children without DCD
- Children with DCD have higher self perception of athletic competence compared to children without DCD
- Children with DCD have similar self perception of athletic competence compared to children without DCD
Q13 - Please tick ONE box Only:
Children with DCD demonstrate better controlled balance than children without DCD
Children with DCD demonstrate poorer controlled balance than children without DCD
Children with DCD demonstrate similar controlled balance to that of children without DCD

Q14 – Please tick ONE box ONLY:
Children with DCD have higher levels of cardiorespiratory fitness compared to children without DCD
Children with DCD have lower levels of cardiorespiratory fitness compared to children without DCD
Children with DCD have similar levels of cardiorespiratory fitness compared to children without DCD

Q15 – Have you ever received training about DCD? Please tick ONE box:
YES
NO

Q16 – IF YES, please specify where this training occurred by ticking the appropriate box(s):
During undergraduate study
During post graduate study
Whilst at post as a PE teacher
Through self study
Other, please state

Q17 – How often do you receive training in teaching children with SEN throughout the duration of one school year? Please tick ONE box:
Zero times per year
Once per year
Twice per year
Three times per year
Four times per year
More than five times per year

THANK YOU FOR TAKING YOUR TIME TO COMPLETE THIS QUESTIONNAIRE
APPENDIX C

PILOT STUDY
Pilot Study

Q1 – How did you find the structure and content of the questionnaire?
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Q2 – Did you find that the questionnaire was too long/ short or was it the right length based on the required information?
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Q3 – Did you understand the objective of the questionnaire?
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Q4 – Was the information provided clear enough in describing what the questionnaire was being used to discover?
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Q5 – What was your overall opinion of the questionnaire?
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APPENDIX D

FOLLOW UP LETTER
Dear (Name of School Headmaster/ mistress)

I sent a questionnaire regarding the awareness of developmental coordination disorder (DCD) to your Physical Education Department a few weeks ago and have not received a reply. As you can appreciate, it is important that as many questionnaires are collected as possible to give validity to the findings. I apologise if you have already returned the questionnaire prior to receiving this letter.

The questionnaire was sent on January 14th 2008 when you may have away from your office. I have included another copy of the questionnaire. It would be most helpful if you could take ten minutes to give your opinions on the information requested.

Thank you for your cooperation

Yours Sincerely,

Daniel Griffin
University of Wales Institute Cardiff
APPENDIX E

SCORE TABLE
## Score Table

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APPENDIX F

RAW DATA
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