Understanding Amotivation in Physical Education

By

Rachel Marie Jackson

A Doctoral Thesis

Submitted in Partial Fulfilment of the Requirements for the Award of Doctor of Philosophy of Loughborough University

April 2016

© Rachel Jackson
Biography

Ideas for my thesis have come about from my time working as a secondary school physical education (PE) and psychology teacher. In my first few years of teaching in a mixed comprehensive school in southeast England I experienced first hand how challenging it was to encourage some students to be physically active in PE lessons. On a number of occasions I would plan lessons specifically for individual students to try and find new innovative ways of making the lesson more encapsulating and fun. I increasingly became interested in how to motivate students to participate in PE lessons and extra-curricular activities and therefore sought to conduct research on this topic. It was from my research and discussions with my supervisor that I focused on the concept amotivation to try and understand why some students do not want to participate in PE. Completing this thesis has been a long journey for myself as I have been teaching PE full-time alongside conducting the research. Fortunately this has enabled me to be ‘in touch’ with current teaching practices and put me in a position whereby I can try and understand possible causes of amotivation.

Whilst conducting my research I got married to my husband and my surname changed from Jackson to Jackson-Kersey. My publications contained in this thesis therefore report my married name.
Acknowledgements

To Dr. Chris Spray, my supervisor, thank you for all your support and guidance. You have encouraged me along the way to explore new ideas and methods of which I have learnt enormous amounts. You have given me the confidence to continue conducting research, and for this I am extremely grateful. It has been a long journey from start to finish but the end is finally here. Thank you.

To all the head teachers and heads of departments, thank you for giving me permission to conduct my research in your schools. I would also like to thank the PE teaching staff who I worked along side for your patience and support, and to the students who participated in the studies by completing a questionnaire.

To my husband, thank you so much for helping me through difficult times and being there to offer encouragement. You have always believed I could achieve a PhD and have supported me these last seven years in order to make this possible.

Finally, to my family who have not only supported me, but have also praised my successful publications. This has helped me to continue to believe and has kept me motivated along the way. Thank you so much.
Abstract

Physical Education (PE) is one of the most important contexts in which to investigate motivational processes due to its exclusivity in including young people of a range of ages and abilities and due to PE being a compulsory activity. PE is not only a platform for students to increase their daily physical activity, but can also provide students with the skills and confidence to pursue physical activity into adulthood. However, there is an increasing amount of concern over the levels of physical activity of young people today, with statistics showing a decline in physical activity among adolescence. Understanding student’s motivational processes during PE may help researchers and physical educators intervene to provide support to those students who are not motivated to participate in PE lessons. Grounded in self-determination theory, this thesis aims to examine student’s amotivation in PE. Although there is growing evidence investigating amotivation, there is a dearth of knowledge concerning amotivation in the PE context and as a multidimensional construct. This thesis therefore aims to address this lack of knowledge by exploring a measure of amotivation that can be used in PE and relationships between the four amotivation dimensions (deficient ability beliefs, deficient effort beliefs, insufficient task values and unappealing task characteristics), physical self-concept and attainment (Study 1). Following Study 1, an examination of student’s perceptions of teacher’s need support as a predictor of change in the amotivation dimensions over time is carried out in Study 2, followed by further investigations to determine additional socio-contextual variables that may be potential predictors of amotivated behaviours (Studies 3a, 3b, 4).

The results of these five studies contained within the thesis provide an interesting insight into student’s amotivation in PE. Evidence for perceptions of teacher’s psychological need support, physical self-concept and peer motivational climate being influential in determining changes in the amotivation sub-types is presented. The findings highlight the need to investigate these relationships further so a more comprehensive understanding of amotivation is achieved. Future research should continue to employ longitudinal designs to identify additional predictors of amotivation and to ensure research into amotivation is substantial in order to design effective interventions to support physical educators in reducing amotivated behaviours.
Contents Listing

Table of Contents ................................................................. iii

List of Tables ........................................................................ iv

List of Appendices ............................................................... vi

List of Publications ............................................................... x
# Table of Contents

**Chapter I:** Introduction ........................................................................................................... 1

**Chapter II:** Literature Review ................................................................................................. 10  
 *Summary* ....................................................................................................................................... 34  
 *Rationale for Study 1-4* .............................................................................................................. 35

**Chapter III:** Study 1 – Amotivation in physical education: Relationships with physical self-concept and teacher ratings of attainment ................................................................. 37  
 *Abstract* ......................................................................................................................................... 39  
 *Introduction* ................................................................................................................................. 40  
 *Method* .......................................................................................................................................... 44  
 *Results* .......................................................................................................................................... 46  
 *Discussion* ..................................................................................................................................... 52  
 *References* ...................................................................................................................................... 56

**Chapter IV:** Study 2 – The effect of perceived psychological need support on amotivation in physical education ...................................................................................................................... 60  
 *Abstract* ......................................................................................................................................... 62  
 *Introduction* ................................................................................................................................. 63  
 *Method* .......................................................................................................................................... 68  
 *Results* .......................................................................................................................................... 70  
 *Discussion* ..................................................................................................................................... 76  
 *References* ...................................................................................................................................... 80

**Chapter V:** Study 3a – Understanding amotivation in physical education across the transition from primary to secondary school ............................................................................................... 85  
 *Abstract* ......................................................................................................................................... 87  
 *Introduction* ................................................................................................................................. 88  
 *Method* .......................................................................................................................................... 92  
 *Results and Discussion* .................................................................................................................. 94

**Chapter VI:** Study 3b – Understanding amotivation in physical education across the transition from primary to secondary school: A longitudinal perspective ................................................................................................. 117  
 *Abstract* ...................................................................................................................................... 119  
 *Introduction* ................................................................................................................................. 120  
 *Method* ...................................................................................................................................... 120  
 *Results and Discussion* .................................................................................................................. 123  
 *Summary* ...................................................................................................................................... 153

**Chapter VII:** Study 4 – Changes in amotivation across different activities in physical education: A longitudinal perspective ...................................................................................................................... 162  
 *Abstract* ...................................................................................................................................... 164  
 *Introduction* ................................................................................................................................. 165  
 *Method* ...................................................................................................................................... 169  
 *Results* ...................................................................................................................................... 173  
 *Discussion* ................................................................................................................................... 195
Chapter VIII: General Discussion……………………………………………. 209
List of Tables

Table 3.1 Standardised Loadings for 4-Factor Confirmatory Model for 16 Items on AI-PE………………………………………………….. 47

Table 3.2 Descriptive Statistics for the Dimensions of Amotivation, Physical Self-Concept, Emotional and Behavioural Engagement and Disaffection and Attainment in Physical Education………………………………………………………… 48

Table 3.3 Correlations Among Amotivation, Emotional and Behavioural Engagement and Disaffection, Physical Self-Concept and Attainment Scores……………………………………………… 50

Table 3.4 A Summary of Hierarchical Multiple Regressions Examining the Influence of the Four Dimensions of Amotivation and Gender on Physical Self- Concept and Attainment………………………… 51

Table 4.1 Means, Standard Deviations, and Reliability Coefficients for all Variables Across the Three Time Points………………………… 72

Table 4.2 Correlations Among the Amotivation Dimensions, Perceptions of Teacher Psychological Need Support and Physical Self-Concept at Time 1………………………………………………………… 73

Table 4.3 Final Models of Students’ Perceptions of Teacher Psychological Need Support Predicting Amotivation Dimensions……………… 75

Table 5.1 Amotivated Students’ Experiences of PE in Primary school: Hierarchical Development of the Raw Data, Lower order, Higher Order Themes and General Dimensions………………… 114

Table 5.2 Amotivated Students’ Expectations of PE in Secondary School: Hierarchical Development of the Raw Data, Lower order, Higher Order Themes and General Dimensions……………………… 116

Table 6.1 Amotivated Students’ Experiences of PE in Primary school: Hierarchical Development of the Raw Data, Lower order, Higher Order Themes and General Dimensions………………………… 140

Table 6.2 Amotivated Students’ Expectations of PE in Secondary School: Hierarchical Development of the Raw Data, Lower order, Higher Order Themes and General Dimensions……………………… 143

Table 6.3 Amotivated Students’ Experiences of PE in Secondary School: Hierarchical Development of the Raw Data, Lower order, Higher Order Themes and General Dimensions………………………… 158
Table 7.1  Means and Standard Deviations for the Amotivation Dimensions, Perceptions of Autonomy, Competence and Relatedness NS, Total Need support, PSC, Peer Motivational Climate Dimensions, Teacher Ratings of Student Effort, Effort Grade and Attainment Grade in Different Activities over a School Year ....................... 175

Table 7.2  Correlations Among the Amotivation Dimensions, Perceptions of Teacher Psychological Need Support, Peer Motivational Climate, Physical Self-Concept, Student Effort and Attainment in Gymnastics at Time 1 ............................................................. 176

Table 7.3  Correlations Among the Amotivation Dimensions, Perceptions of Teacher Psychological Need Support, Peer Motivational Climate, Physical Self-Concept, Student Effort and Attainment in Netball at Time 1 ................................................................. 177

Table 7.4  Correlations Among the Amotivation Dimensions, Perceptions of Teacher Psychological Need Support, Peer Motivational Climate, Physical Self-Concept, Student Effort and Attainment in Dance at Time 1 ................................................................. 178

Table 7.5  Correlations Among the Amotivation Dimensions, Perceptions of Teacher Psychological Need Support, Peer Motivational Climate, Physical Self-Concept, Student Effort and Attainment in Swimming at Time 1 ...................................................... 179

Table 7.6  Correlations Among the Amotivation Dimensions, Perceptions of Teacher Psychological Need Support, Peer Motivational Climate, Physical Self-Concept, Student Effort and Attainment in Tennis at Time 1 ................................................................. 180

Table 7.7  Correlations Among the Amotivation Dimensions, Perceptions of Teacher Psychological Need Support, Peer Motivational Climate, Physical Self-Concept, Student Effort and Attainment in Athletics at Time 1 ................................................................. 181

Table 7.8  A Model of Deficient Ability Beliefs (AB) and Deficient Effort Beliefs (EB) Predicting Insufficient Task Value (TV) and Unappealing Task Characteristics (TC) Whilst Controlling for PSC ............................................................... 183

Table 7.9  A Model of Insufficient Task Value (TV) and Unappealing Task Characteristics (TC) Predicting Deficient Ability Beliefs (AB) and Deficient Effort Beliefs (EB) whilst controlling for PSC ............................... 184

Table 7.10 A Model of the Four Amotivation Dimensions Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC ....................................................... 185
| Table 7.11  | A Model of Students’ Perceptions of Teacher Psychological Need Support Predicting the Four Amotivation Dimensions whilst controlling for PSC | 185 |
| Table 7.112 | A Model of Students’ Perceptions of Teacher Psychological Need Support as Single Predictors of the Four Amotivation Dimensions whilst controlling for PSC | 187 |
| Table 7.113 | A Model of Student’s Perceptions of Psychological Need Support (NS) Predicting the Four Amotivation Dimensions whilst controlling for PSC | 189 |
| Table 7.12  | A Model of Students’ Perceptions of Teacher Psychological Need Support Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC | 190 |
| Table 7.13  | A Model of Peer Motivational Climate Dimensions Predicting the Four Amotivation Dimensions whilst controlling for PSC | 192 |
| Table 7.14  | A Model of Peer Motivational Climate Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC | 193 |
| Table 7.15  | A Model of Peer Motivational Climate Dimensions and the Four Amotivation Dimensions Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC | 194 |
| Table 7.16  | A Model of Students’ Perceptions of Teacher Psychological Need Support and the Four Amotivation Dimensions Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC | 195 |
## List of Appendices

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Study</th>
<th>Document Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>Study 1</td>
<td>Ethics Checklist</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Study 1</td>
<td>Headteacher Letter</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Study 1</td>
<td>Parental Letter</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Study 1</td>
<td>Participant Information Sheet</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Study 1</td>
<td>Willingness to Participate Form</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Study 1</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Study 2</td>
<td>Ethics Checklist</td>
</tr>
<tr>
<td>Appendix H</td>
<td>Study 2</td>
<td>Head teacher Letter</td>
</tr>
<tr>
<td>Appendix I</td>
<td>Study 2</td>
<td>Parental Letter</td>
</tr>
<tr>
<td>Appendix J</td>
<td>Study 2</td>
<td>Participant Information Sheet for Teacher</td>
</tr>
<tr>
<td>Appendix K</td>
<td>Study 2</td>
<td>Participant Information Sheet for Student</td>
</tr>
<tr>
<td>Appendix L</td>
<td>Study 2</td>
<td>Willingness to Participate Form</td>
</tr>
<tr>
<td>Appendix M</td>
<td>Study 2</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>Appendix N</td>
<td>Study 3a/b</td>
<td>Headteacher Letter</td>
</tr>
<tr>
<td>Appendix O</td>
<td>Study 3a/b</td>
<td>Parental Letter</td>
</tr>
<tr>
<td>Appendix P</td>
<td>Study 3a/b</td>
<td>Participant Information Sheet</td>
</tr>
<tr>
<td>Appendix Q</td>
<td>Study 3a/b</td>
<td>Participant Information Sheet for Parent</td>
</tr>
<tr>
<td>Appendix R</td>
<td>Study 3a/b</td>
<td>Participant Information Sheet for Teacher</td>
</tr>
<tr>
<td>Appendix S</td>
<td>Study 3a/b</td>
<td>Willingness to Participate Form</td>
</tr>
<tr>
<td>Appendix T</td>
<td>Study 3a</td>
<td>Interview Schedule</td>
</tr>
<tr>
<td>Appendix U</td>
<td>Study 3a</td>
<td>Interview Transcript</td>
</tr>
<tr>
<td>Appendix V</td>
<td>Study 3b</td>
<td>Interview Schedule</td>
</tr>
<tr>
<td>Appendix W</td>
<td>Study 3b</td>
<td>Interview Transcript</td>
</tr>
<tr>
<td>Appendix X</td>
<td>Study 3b</td>
<td>Interview Schedule</td>
</tr>
<tr>
<td>Appendix</td>
<td>Study</td>
<td>Document Type</td>
</tr>
<tr>
<td>----------</td>
<td>--------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Appendix Y</td>
<td>Study 3b</td>
<td>Interview transcript</td>
</tr>
<tr>
<td>Appendix Z</td>
<td>Study 4</td>
<td>Head teacher Letter</td>
</tr>
<tr>
<td>Appendix AA</td>
<td>Study 4</td>
<td>Parent Letter</td>
</tr>
<tr>
<td>Appendix BB</td>
<td>Study 4</td>
<td>Participant Information Sheet for Teacher</td>
</tr>
<tr>
<td>Appendix CC</td>
<td>Study 4</td>
<td>Participant Information Sheet for Students</td>
</tr>
<tr>
<td>Appendix DD</td>
<td>Study 4</td>
<td>Willingness to Participate Form</td>
</tr>
<tr>
<td>Appendix EE</td>
<td>Study 4</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>Appendix FF</td>
<td>Study 4</td>
<td>Teacher Rating of Student Effort Questionnaire</td>
</tr>
<tr>
<td>Appendix GG</td>
<td>Study 4</td>
<td>Attainment Criteria Sheet</td>
</tr>
</tbody>
</table>
List of Publications arising from this Thesis

Peer reviewed journal articles:


Conference proceedings:


Chapter I

Introduction
There is an increasing body of evidence that shows a rise in the number of children who are overweight or obese in the UK and worldwide. Childhood obesity has therefore become one of the biggest threats to public health in England. There are over 15 million individuals under the age of 20 in England, and according to government data, 23,000 have diabetes, with more than 1 in 3 11-15 year olds being obese or overweight (Children and Young People’s Health Outcomes Forum, 2014/15). Foresight reports in 2007 suggested that by 2050, 55% of boys and 70% of girls under 20 years of age could be overweight or obese. Encouragingly however, recent data now portrays a healthier outlook. For example, the Health Survey for England (HSE, 2013) has suggested by 2020, 13% of boys and 10% of girls aged 2-11 might be obese. Nevertheless, studies have shown that 50% of children who are obese will remain obese into adulthood (Steinbeck, 2001). Obesity is often determined by measuring an individuals’ body mass index (BMI). A high BMI score may indicate high levels of adiposity, which is the greatest health concern. Furthermore, research has shown that elevations in BMI over time are associated with an increased risk of health complications (Reilly & Kelly, 2011). For example, childhood and adolescent obesity has been associated with short and long-term physiological health risks such as elevated blood pressure (Freedman, Dietz, Srinivasan, & Berenson, 1999), and type 2 diabetes mellitus (Drake, Smith, Betts, Crowne, & Shield, 2002). Furthermore, Reilly and Kelly (2011) conducted a systematic review with evidence from 2002 to 2010 and found 11 studies that showed being overweight or obese in childhood, significantly increased the risk of ‘cardiometabolic morbidity’ such as diabetes, hypertension, heart disease and stroke in adulthood. Although such conditions take several years to progress, research has started to show conditions such as diabetes, asthma, musculoskeletal conditions and sleep disorders becoming more common among children who are obese and/or overweight (Daniels, 2006).

Researchers have also noted the psychological health risks of obesity in childhood. For example, body dissatisfaction and a desire to be thin have been identified as being increasingly prevalent among girls (Brunet, Sabiston, Dorsch, & McCreary, 2010), as well as low self-esteem and low physical self-concept (Klomsten, Skaalvik, & Espnes, 2004). Moreover, mental disorders such as depression have increased in adolescence in recent years and have been linked to higher BMI and lower levels of physical activity (Goodman & Whitaker, 2002). The serious ill effects of obesity are not only costing lives, but are also impacting on the UK economy. Obesity can reduce
individuals’ ability to work and costs the National Health Service (NHS) five billion pounds per year. Therefore, the prevalence of childhood obesity in the UK and worldwide has led the government and researchers to explore plausible explanations for the continued rise in overweight and obese children.

**Physical activity/inactivity in youth**

Physical activity levels among children have been one factor of huge importance to researchers and the government in providing an explanation for obesity in children (Department of Health, 2011b). Recent research emphasises the immediate health benefits of being more active during childhood as well as the improved psychological well-being (Ortega, Ruiz, Castillo, & Sjöström, 2008) and the high positive correlation between being active during childhood and continuing to be physically active into adulthood. The government has subsequently published a set of guidelines recommending the minimum requirement for physical activity in children. Currently in the UK, it is recommended that all children between the ages of 5 and 18 years should engage in ‘moderate to vigorous intensity physical activity for 60 minutes each day and up to several hours every day’. Vigorous intensity activities that strengthen muscle and bone should be conducted three times a week and all children are recommended to reduce the time spent engaged in sedentary activities, for example, sitting, watching TV and playing computer games (Department of Health, Physical Activity, Health Improvement and Protection, 2011). In response to these guidelines, the government has created initiatives in schools and across the country to inspire children to be physically active. For example, the ‘School Games’ was introduced after the London Olympics 2012 to give students the opportunity to participate in competitive sport. The aim was especially to give the least active children a chance to take part in a wide range of sports. Moreover, ‘Change for Life Sports Clubs’ continued to be promoted in primary and secondary schools, again to encourage the less active students to get involved in clubs outside of school (Department of Health, 2011b). A further initiative by the government was to set up ‘Places, People, Play’ which aimed to improve facilities in all cities, towns and villages across the country so more children had access to areas in which they could be active (Department for Culture, Media and Sport, 2010; Department of Health, 2011b). However, even though the government has set guidelines and has implemented nationwide initiatives to reduce obesity among young people, statistics in 2012 showed that the number of children meeting the guidelines were still low. For example, only 24% of boys and 23% of girls aged 5-7 years met the recommendations and this percentage
has since decreased to 14% for boys and 8% for girls (HSE, 2012). Thus, it seems from these results that children may be spending more time in sedentary activities and/or failing to engage in the recommended amounts of physical activity as they transition into adolescence.

In the UK, the HSE (2012a) classifies low activity as being less than 30 minutes of moderate intensity physical activity per day. The term sedentary behaviour therefore, has been used to classify individuals who are less active and incorporates a diverse range of behaviours. Thus, sedentary behaviour can be defined as ‘a class of behaviours that involve low levels of energy expenditure’ (HSE, 2012a, pp.42), in particular lying down and sitting. For example, sedentary behaviour would be demonstrated by sitting down at the desk in the classroom and at home, doing homework, watching TV, social networking and playing computer games. Research has shown that children spend more time engaged in sedentary activities as they get older. Statistics in the UK have shown that at weekends, sedentary behaviour increases in boys and girls from 8% at age 2 years, to 40% for boys and 41% for girls at age 15 years (HSE, 2012b). In schools for example, giving children homework to complete after-school competes with the time they may have to participate in out of school sports clubs. Thus, it is deemed important that children and adolescents are given opportunities to be physically active within the school day in the form of physical education (PE) lessons and extra-curricular activities at lunchtimes and weekends.

**Physical Education**

The school environment is one of many contexts that can provide an opportunity for young people to increase their levels of physical activity. Physical education is a requirement in all primary and secondary schools in the UK from age 5 to 18 years of age. Research into physical education can provide insight into the amount of physical activity children are participating in on a daily and weekly basis. The Physical Education and Sport Survey (2010) aimed to collect information about the levels of participation in PE and school sport across the UK. The survey involved 21,436 schools in total, and the findings showed 55% of pupils in years 1-13 took part in at least three hours of high quality PE and sport outside of school in a typical week. The survey also found that participation levels were highest in years 4-6 (7-10 year olds), reasonably high in years 7 and 8 (11-12 year olds) and at their lowest in years 12 and 13 (17-19 year olds). When comparing boys and girls, the results showed small differences in participation levels in years 1-7 (5-11 years old), however, after year 7, the differences increase, with girls
being less likely (52% compared to 58%) to take part in at least three hours of PE and school sport per week. Overall, the statistics highlight that almost 50% of students in both primary and secondary schools are participating in less than three hours of physical activity per week (Department of Education, 2010) One explanation for the latter result may be due to additional evidence from the survey that explored the average number of minutes of PE offered to pupils, including the average number of club links the school has established. The findings suggest that there may be a decline in the number of minutes students are participating in PE from the survey conducted in 2009/10. For example, in a recent survey report from the Youth Sport Trust in 2015, on average, 102 minutes in years 1 and 2 (key stage 1) and 114 minutes in year 3, 4, 5 and 6 (key stage 2) were spent taking part in PE compared to data in 2009/10 which indicated 126 minutes in both years 1 and 2 and 127 minutes in years 3, 4, 5 and 6. The average number of minutes taking part in PE in years 7, 8 and 9 (key stage 3) in 2013/14 was 118 minutes compared with data from 2009/10, which found the average number of minutes taking part in PE was 131 minutes in year 7, 129 minutes in year 8 and 125 minutes in year 9 (Youth Sport Trust, 2015). Although direct comparisons are unable to be made due to researchers using different methods to measure time spent being physically active, the data suggest that there may be a decline in physical activity in PE as students progress through the key stages from primary to secondary school. The concern is that if a downward trend continues in schools, more and more children may become physically inactive and will spend more time engaged in sedentary activities, possibly leading to a rise in unhealthy eating behaviours and an increase in BMI.

Physical education in schools provides children and adolescents with the opportunity to be physically active, and may be some individuals’ only opportunity to engage in physical activity. Therefore, PE educators have a huge responsibility to plan lessons that maximise the amount of time an individual spends being active. However, given the latter statistics displaying downward trends in physical activity in schools, questions remain as to whether PE lessons are becoming increasingly more sedentary. For example, are teachers spending too much time delivering instructions, demonstrating skills, and/or trying to meet past government targets by encouraging students to evaluate and feedback on performances? (Department for Education and Skills, 2004). All of which require students to stop being active. Given an average PE lesson in the UK lasts 60 minutes, 20 minutes of which is allocated to changing time, PE teachers only have 40 minutes in which to give students the opportunity to reach levels of ‘moderate to
vigorously intensity activity’ recommended by the UK government (Department of Health, Physical Activity, Health Improvement and Protection, 2011).

Currently the National PE curriculum (NCPE) in the UK has set out clear aims that PE teachers should follow both in primary and secondary school. In summary, teachers should be; a) developing competence among students to excel and achieve in a wide range of activities; b) ensuring all students are being physically active for substantial amounts of time; c) encouraging students to participate in competitive sport and d) encouraging students to lead healthy lives through diet and fitness (Department for Education, 2013). Additionally, the curriculum is divided into key stages (1-5) depending on a student’s age and school year, and students are required to achieve specific attainment targets to pass each key stage in order to show progress. The NCPE provides PE teachers with statutory requirements that need to be taught at each key stage so all children have the opportunity to become physically confident in supporting their own health and fitness. From key stage 1 the focus is to teach children fundamental movement skills in throwing, catching, running and jumping, as well as developing their flexibility, hand-eye co-ordination and agility. Team games are also encouraged to develop understanding in the basic principles of attacking and defending. As children progress up to key stage 2 (Years 4, 5 and 6), children should be applying a range of different skills, in different ways, in a variety of sports. They should be starting to evaluate their own performances and make comparisons to others. Competition is also encouraged through modified games in traditional sports such as cricket, netball, football and rugby. At the start of secondary school, children will be transitioning into key stage 3 and will be aiming to achieve the upper level of the key stage before entering Year 10 (key stage 4). To summarise, the NCPE highlights that teachers have a responsibility to increase students’ physical competence, encourage students to be active, and teach students the physical skills to be able to compete in a range of sports and make healthy choices regarding their lifestyle. What then are the barriers that teachers are facing to achieve these targets?

There are a multitude of factors that may influence physical activity patterns among children and subsequently make it harder for teachers to improve a child’s fitness and health in PE lessons. In order to understand these factors, Kohl and Hobbs (1998) considered there to be four determinants of children’s physical activity: physiological, psychological, socio-cultural and ecological. Physiological determinants of physical activity in children, for example, are gender and age (Sallis, 2000). Research has shown
that girls are less active than boys and physical activity declines in adolescence (World Health Organisation, 2010). Psychological determinants of physical activity include perceptions of physical competence (Sallis, 2000), belief in one’s ability to engage in a particular activity, (self-efficacy; Dishman et al, 2004), and enjoyment (Dishman et al, 2005), all of which may impact on a child’s overall motivation to participate. Socio-cultural determinants of physical activity include peer and parental support for participation (Prochaska, Rodgers, & Sallis, 2002). This may also include support from teachers and coaches to encourage children to be active. Ecological influences of physical activity in children include accessibility to sport facilities, large green spaces, availability of equipment and being able to access transport to outside sports clubs (Davison & Lawson, 2006). Although the above factors may be explored as being determinants of being physically active, these factors may also be barriers for children to easily engage in physical activity. For example, psychological barriers may be individuals’ deficient ability beliefs, low perceptions of physical competence and subsequent low self-determined motivation.

Physical education in schools can help support and/or overcome some of the aforementioned determinants/ barriers towards physical activity, in particular the psychological determinants. PE is most likely to be some children’s only opportunity to be physically active in a given day or week and therefore the only source of informative feedback concerning their physical skill development. Such feedback may be crucial in shaping students’ motivation to continue to engage in exercise and participate in future physical activity. However, PE is a compulsory subject and not all students want to participate in the lesson. Therefore, not all students are making the most of the opportunities provided in PE to increase their daily physical activity.

**Motivation/Amotivation**

Motivation has been defined as ‘the process that influences the initiation, direction, magnitude, perseverance, continuation, and quality of goal-directed behaviour’ (Maheer & Zusho, 2009, pp. 77). Motivation is a key psychological determinant of physical activity through influencing the amount of effort and time an individual dedicates to being active. Popular theories of motivation in sport and exercise are based on organismic theories of motivation such as self-determination theory (SDT: Deci & Ryan, 1985), which recognises the relationship between the social context and individuals’ innate needs. Social cognitive theories such as achievement goal theory (Nicholls, 1989) are also popular theories among researchers, and make the assumption
that individuals actively seek competence in achievement contexts. Motivation theories
provide insight into why individuals want to engage and persist in physical activity, as
well as increasing our understanding into why some individuals fail to engage at all.

SDT defines an absence of motivation with the term ‘amotivation’, which is a
component of the three global types of motivation; intrinsic, extrinsic and amotivation
(Deci & Ryan, 1985, 2000). Intrinsic motivation is the most self-determined form, with
varying types of extrinsic motivation. Furthermore, SDT recognises an individual has
three basic psychological needs that need to be satisfied in order to be self-determined
(Deci & Ryan, 2000). The need for autonomy, competence and relatedness are required
to be supported in the social environment in order to increase self-determined motivation
in individuals.

There have been vast amounts of research on SDT amongst children and
adolescents for understanding physical activity (Ntoumanis, 2001; Standage, Duda, &
Ntoumanis, 2003; Standage, Duda, & Ntoumanis, 2005), and researchers have explored
relationships with need satisfaction and SDT in sport as well as physical education
(Standage et al, 2005). Although amotivation has been studied alongside the other
motivational regulations for establishing negative relationships with a number of
exploratory variables, very little research has focused in particular on amotivation as a
sole construct. Establishing a greater understanding of amotivation is required in order to
help identify possible factors that may prevent children and adolescents from engaging in
PE and sport. What the research in sport, exercise and physical education so far suggests
is that amotivation for physical activity may be associated with an increase in
maladaptive outcomes (Deci & Ryan, 1985; Ntoumanis, Pensgaard, Martin, & Pipe,
2004).

The aim of this thesis is therefore, to further expand our understanding of
amotivation amongst children and adolescence within the physical education context in
order to try and establish possible determinants and consequences of amotivated
behaviour. By deepening our understanding of amotivation we can begin to explore
potential interventions to decrease amotivation and increase physical activity. This thesis
continues in Chapter II by reviewing the literature on motivation, focusing in particular
on SDT and amotivation, and explores past research into potential determinants and
outcomes of amotivation, specifically in Physical Education. In Chapter III we conducted
the first study by investigating the reliability and validity of the Amotivation Inventory in
Physical Education (AI-PE), as well as exploring the relationships between amotivation
and socio-contextual variables. In Chapter IV we proceeded to conduct a longitudinal study to analyse changes in amotivation over a unit of work in PE, in addition to exploring potential predictors of change. In Chapter V and VI qualitative research is described to enrich our understanding of amotivation further across the transition from primary to secondary school. By interviewing students we were able to identify additional variables that we could investigate further. Hence, Chapter VII details the final study, which is a longitudinal piece of research looking at amotivation scores across different activities and exploring change in amotivation across a school year, as well as investigating possible determinants of change. The thesis concludes with a general discussion including practical implications and limitations.
Chapter II

Literature Review
Motivation has long been thought of as hugely important in the learning process. The word ‘motivation’ originates from the Latin verb *movere* meaning ‘to move’. The questions that lie in the heart of motivation research are, what motivate human beings to move, expend effort, persist, accomplish goals, and make choices? The complexity of understanding why human beings behave in certain ways has bred motivational research, which has led to the development of a number of theories to try and explain such complex internal processes that direct human behaviour. The problem however, is motivation is so complex that not any one theory has been, and will be, able to explain every possible motive for an individuals’ actions. The present chapter provides a brief history of motivation theories and a review of the most popular motivational theories used in educational research. An in-depth theoretical review on self-determination theory (SDT: Deci & Ryan, 1985; 2000) is then discussed followed by exploring research on SDT, specifically in the physical education (PE) context. The focus then turns to the motivational regulation amotivation to enhance our understanding of why individuals are not motivated, specifically in physical education. We conclude the review with a comprehensive explanation as to the importance of exploring the concept of amotivation further in PE.

**A history of motivation theory**

The first half of the 20th century focused very much on motivated behaviours being due to an individuals’ unconscious drive state. For example, the drive reduction theory defined internal drive states, such as the need for hunger, as internal states of arousal and tension that need to be satisfied in order to be reduced (Hull, 1943, 1952). Biological needs such as hunger, motivate us to seek food in order to reduce the tense and uncomfortable drive state that hunger brings. According to this theory, human beings are driven to reduce drive states and decrease an internal state of arousal. Although this theory may hold true when discussing human motivation to reduce feelings of hunger, can it explain motivation in contexts whereby there is not an uncomfortable drive state that needs to be fulfilled in order to survive?

Maslow (1954) developed the ‘Hierarchy of Needs’ to best describe his theory of motivation. His theory suggested that human beings are driven to achieve their maximum potential and will continue to be driven unless obstacles are put in their way. Obstacles may include: finance, education, support, accessibility, and health, all dependent on the goal in pursuit. Maslow believed that certain needs had to be met at the bottom of the hierarchy before humans can strive to meet higher order needs. For
example our basic needs such as food, sleep, water, and oxygen need to be met otherwise humans are not able to function. How for example, can we be motivated to exercise if we have not eaten, not slept, are dehydrated, or at a high altitude with less oxygen? Once these needs are met, humans then need to feel safe and secure in their environment, they also need to be loved and be attached to others, to not only feel safe but to also feel a sense of belonging. All of these needs have to be met before higher needs such as achievement, education, competence, self-esteem and our full potential can be accomplished. According to Maslow, nobody ever reaches his or her full potential. We humans are continually striving to achieve self-actualisation in our lifetimes but are faced with obstacles along the way, which make our goals harder to achieve. However, one main problem with this theory in explaining human motivation is the failure to explain the origins of individual differences in motivated behaviour. In western society an individual may be brought up in a loving home with food, water, shelter, and comfort, but may not be motivated to achieve at school, may have low self-esteem and may have low competence. How then can we explain why some individuals are more motivated compared to others if their lower needs are met?

In contemporary motivation research, the motivational issues mentioned previously are still current. Any one researcher still cannot define the concept of motivation and Ford (1992) argued that there are at least thirty-two theories of motivation encompassing their own definitions. It would take too long to discuss every theory, especially as each theory differs broadly in their understanding and definition of motivation. The term ‘motivation’ is so vague, contemporary researchers on motivation have focused on cognitive processes of motivation such as personal goal setting, self-efficacy beliefs and competence, as well as emotional processes.

Atkinson (1957) began to explore cognitive processes through the concept of an individuals’ personal goal setting and personal strivings, and subsequently developed the expectancy-value theory of motivation. Atkinson assumed that human beings are able to make rational choices and set rational goals, based on having knowledge of the probability of succeeding the specific goal and the incentive value of the goal outcome. Both probability of success and incentive value effect the choice of task and are influenced by the perceived difficulty of the task. For example, an individual may perceive a task to be extremely difficult, they would cognitively go through the process of rationalising whether they have a high or low chance of succeeding and would question the value of that success (reward and/or pride) should they succeed and the
effects of failure (shame) should they fail. Ultimately such decision-making would
determine an individuals’ need to achieve, or need to avoid failure (Atkinson, 1957).
Thus, need to achieve personalities perhaps would be more inclined to take risks and be
determined to maximise their potential, even when faced with obstacles. In comparison,
need to avoid failure personalities may struggle to ever realise their maximum potential
due to setting unchallenging goals.

So far, the earlier theories suggest the importance of recognising the innate
physiological needs humans possess, as well as highlighting the psychological needs
such as emotions, self-efficacy, self-esteem and self-actualisation (e.g. Maslow, 1954).
However, organismic theories, as well as focusing on individuals’ needs, also recognise
the social context as being extremely influential (e.g. SDT, Deci & Ryan, 1985).
Additionally, social cognitive theories such as achievement goal theory (AGT: Nicholls,
1989), and self-efficacy theory (Bandura, 1986), have become increasingly popular in
the sport and exercise literature and focus on the assumption that human beings actively
make their own decisions and are the driving force behind determining their own goals
and successes. In the educational setting, Pintrich and Schunk (1996) believed valid
indicators of motivated behaviour were observing how students respond to failure, solve
problems, learn difficult skills and take on challenges. At present, motivational research
in education has tended to draw upon self-determination theory and achievement goal
theory to explain student motivation.

Achievement goal theory (AGT: Nicholls, 1989) proposed the existence of two
contrasting goals that have been identified among a number of motivated behaviours.
These are ego-centered goals (trying to outperform the ability of others) and task-
centered (develop competence in a skill and master a task). Therefore the main
assumption of the theory is that there is an underlying desire for individuals to
demonstrate competence in an achievement context and to try and avoid displaying
incompetence. How students view their competence has therefore been an interesting
part of AGT. In contrast, although SDT recognises the importance of competence in
shaping motivated behaviour, SDT also posits that individuals have basic psychological
needs that need to be satisfied in order to achieve high quality motivation, whereby
individuals are functioning effectively, improving their health and well-being and
enhancing their performance. SDT views the self as an active agent and is not purely
reliant on the self-evaluation of perceived competence, but actively integrates within the
social environment in order to try and nourish the self, by not only satisfying
competence but also autonomy and relatedness (Deci & Ryan, 2002). SDT also explores the quality of motivation via separate motivational regulations that lie on a continuum of high self-determination (intrinsic), to an absence of motivation (amotivation) and may be more sufficient in aiding our understanding of why some individuals have difficulty fostering optimal engagement and persistence in physical activity.

**Self-determination theory**

Self-determination theory (SDT) is an organismic and dialectical theory, addressing the self in social contexts in order to understand individuals’ well-being. The first SDT sub-theory that was developed was cognitive evaluative theory (CET: Deci & Ryan, 1980), which focused on intrinsic motivation and external events such as rewards and feedback. Thus, SDT includes a multidimensional motivation orientation encompassing three types of motivation; intrinsic motivation, extrinsic motivation and amotivation, all of which operate on a continuum of self-determination (Deci & Ryan, 1985, 2000). Intrinsic motivation represents people who engage in activities for enjoyment, interest, experience volition and do not need external rewards or punishments as a motive for doing an activity. Intrinsic motivation represents the greatest form of self-determination and has been viewed as a multidimensional construct in its own right (McAuley, Duncan, & Tammen, 1989; Pelletier, Dion, Tuson, & Green-Demers, 1995). In physical education, intrinsically motivated students would engage in activities purely out of enjoyment and for the satisfaction participating in the activity brings (Standage et al, 2005). On the contrary, extrinsic motivation encompasses behaviours that are driven by external influences, which subsequently drive individuals’ actions. SDT argues that it is not a case of an individual being either intrinsically motivated or extrinsically motivated, but rather the two constructs are experienced simultaneously and together help determine the quality of motivation (Ryan & Connell, 1989). Extrinsic motivation can also be differentiated based on different external motives for participating in an activity. Extrinsic motivation subsequently comprises external regulation, introjected regulation, identified regulation and integrated regulation, all of which vary in their relative autonomy. Organismic integration theory (OIT: Deci & Ryan, 1985) was therefore a mini theory of SDT that identified the quality of motivation on a perceived locus of causality scale, ranging from highly autonomous motives of behaviour, to low autonomous motives of behaviour. Moreover, OIT suggests the more external contingencies can be internalised and
eventually integrated, the more autonomous these contingencies become, leading to higher levels of self-determination.

Integrated regulation is the most self-determined form of extrinsic motivation (Deci & Ryan, 2000). The behaviour has integrated into the self, that is the individual’s values and needs have become congruent with their goals and actions and they recognise the significance and worth of the activity (Deci & Ryan, 2000). In physical education, a student is choosing to engage and participate in physical activity because they have internalised the behaviour and it has become part of the self. They may be still participating to achieve a desired outcome, so the behaviour is not intrinsically motivated (Bryan & Solmon, 2007). With identified regulation, the motivation becomes slightly less autonomous and self-determined but is still highly internalised. Individuals value the importance of the activity and identify the relevance of their actions to their goals (Deci & Ryan, 1985, 2000). At this stage, individuals are participating in activity because they choose to, rather than because they have to. The next level of extrinsic motivation is introjected regulation, which involves undertaking behaviour to avoid guilt and anxiety and enhance the ego. Individuals need to maintain their self-worth at this stage of motivation and have yet to integrate the regulation into the self (Deci & Ryan, 2000). A student in a PE lesson, for example, will want the teacher to give praise for their skills to accentuate their pride (Standage et al; 2005). Finally, external regulation is the lowest form of extrinsic motivation and is considered to be a highly controlled form of extrinsic motivation with extremely low internalisation. At this stage, individuals participate in an activity to obtain a desired outcome, such as a reward or to avoid punishment, and once the reward or threat of punishment is removed the individual is likely to disengage from the activity (Deci & Ryan, 2000). In the school environment students are expected to participate in lessons and are aware of the consequences if they do not follow teacher instructions.

SDT also recognises the state of amotivation, whereby there is an absence of motivation for an activity. Amotivation has been associated with negative experiences and consequences in the literature (Ntoumanis, 2001; Vallerand & Bissonnette, 1992), and has also been associated with the concept of ‘learned helplessness’ (Abramson, Seligman & Teasdale, 1978), whereby individuals fail to perceive contingencies between their actions and the subsequent outcomes. Amotivated individuals believe their actions are by chance and out of their control, leading to feelings of incompetence (Deci & Ryan, 1985). They are neither intrinsically motivated nor extrinsically
motivated but merely lack any intention or personal causation. Amotivation can be described as a suboptimal state at the lowest end of the continuum of relative autonomy. However, recent research has argued that an individual who lacks motivation can be autonomous in their motive for not wanting to participate in an activity. In other words, they are choosing not to take part rather than feeling they are being controlled. (Vansteenkiste, Lens, De Witte, De Witte, & Deci, 2004).

Another sub-theory of SDT is the basic psychological needs theory (BPNT: Ryan & Deci, 2000). This theory suggests that within our social environment are “fundamental nutriments” referred to as basic psychological needs which are essential for growth and well-being. The three needs identified are the need for autonomy, competence and relatedness (Deci & Ryan, 2000). When these needs are supported by the social context, intrinsic motivation and subsequent internalisation are facilitated. On the other hand, if these three basic psychological needs are thwarted, intrinsic motivation will be hindered, behaviors will become more difficult to internalise and the individual may endure ill being and amotivated behaviours (Deci & Ryan, 2000).

Autonomy is described as the desire to self-initiate one’s personal behaviour or have volitional control, and is a facilitator of intrinsic motivation. Competence is the desire of individuals to effectively interact with their environment and relatedness is the need to be attached to significant others (e.g. parents, peers and teachers) and feel connected. According to SDT, the basic psychological needs form the starting point of the motivational process; whether individuals needs are satisfied or thwarted in a specific social context will affect the quality of motivation.

**Review of research on SDT and amotivation in physical education**

The majority of research to date has explored amotivation as a uni-dimensional construct alongside the other motivational regulations in the context of self-determination theory (Ntoumanis, 2001; Standage et al; 2003, 2005). Earlier studies have focused on exploring Vallerand’s hierarchical model of intrinsic and extrinsic motivation, which consisted of three levels: the global (personality), contextual (life domains), and situational (state). Vallerand (1997; 2001) proposed a motivational sequence at each level of generality consisting of “social factors ➔ psychological mediators ➔ types of motivation ➔ consequences”, and studies have subsequently focused on the contextual level of motivation (e.g. sport, academic and PE domains), to explore the proposed motivational sequence further (Ntoumanis, 2001; 2005).
Specifically, research on SDT in physical education has been driven by Vallerands’ model, and researchers have explored the impact of social factors such as motivational climate (mastery and performance; Parish & Treasure, 2003), and perceptions of need support (Standage, Duda, & Pensgaard, 2005), on the psychological mediators of autonomy, competence and relatedness and the six motivational regulations. Vallerands’ model also hypothesises that the differing motivation regulations can lead to variance in the affective, behavioural and cognitive consequences, such as enjoyment, boredom, effort, and future intentions to participate in physical activity (Ntoumanis; 2001, 2005; Standage et al, 2003; Standage, Duda, & Ntoumanis, 2006). Thus, the latter consequences describe adaptive and maladaptive outcomes that may be derived from an individual having high or low self-determined motivation. For example, adaptive outcomes (enjoyment, high effort, persistence) have been found to result from more self-determined regulations, such as intrinsic motivation and identified regulation. On the other hand, maladaptive outcomes (boredom, unhappiness, low effort, drop-out) are theorised to result from less self-determined regulations, such as introjected regulation, external regulation and amotivation (Ntoumanis, 2001; Standage et al; 2003, 2005). In general, SDT research in PE has primarily focused on the social contextual variables that mediate the psychological needs and impact on student motivation, as well as exploring outcome variables that derive from individuals’ differing motivational or behavioural regulations. Furthermore, the majority of the empirical evidence supports SDT and collaboratively suggests more self-determined motivational types, such as intrinsic motivation, will have more positive consequences than less self-determined motivational types and amotivation. Despite the evidence, there is still a dearth of literature that has sought to gain a deeper understanding of amotivation in the PE context. Given the negative consequences of amotivation on an individual’s behaviour, more research needs to be conducted to increase our understanding of amotivation in the PE environment.

A model of amotivation

Amotivation has largely been seen as part of the self-determination continuum in past research, or has been termed ‘low motivation’ in some studies (Ullrich-French & Cox, 2008). The majority of research to date has focused on amotivation as a one-dimensional construct. However, Legault, Green-Demers, & Pelletier (2006) proposed that “…amotivation is itself an entity, a complex and multifaceted process, which is not so much an absence as a broad effect of unmet needs”.

Pelletier, Dion, Tuson and Green-Demers (1999), proposed a model of amotivation and investigated reasons for an individuals’ lack of motivation toward environmental protective behaviours. They referred to amotivation as ‘global helplessness beliefs’, but argued that an individual is amotivated for more specific reasons. In Pelletier and co-workers study, they identified three additional dimensions of amotivation: strategy beliefs, capacity beliefs and effort beliefs. Strategy beliefs refer to the extent that individuals perceive certain strategies to be effective in achieving their goal. If an individual is amotivated, it is proposed that they will not believe that their behaviour on a task will be effective to accomplish the desired outcome. Capacity beliefs or ability beliefs stem from self-efficacy theory (Bandura, 1997). According to Bandura, self-efficacy refers to people’s belief in their capacity to perform certain behaviours. When self-efficacy is low, individuals do not believe that they can carry out a certain action and therefore can lead to amotivation (Pelletier et al, 1999). Effort beliefs refer to the desire to expend energy for the required behaviour. If an individual thinks they are unable to exert the required amount of effort to perform a certain action or behaviour, then amotivation may result (Pelletier et al, 1999). Skinner, Wellborn & Connell (1990) conducted a study on how childrens’ motivation in school can be enhanced. They found that capacity and effort beliefs were a necessary antecedent of performance.

Legault and colleagues (2006) further developed Pelletier’s model of amotivation and attempted to apply it in an academic school setting. Their study confirmed that ability and effort beliefs directly impacted student amotivation, but strategy beliefs had no direct impact. However, value placed on the learning of the task and characteristics of the task were shown to also have an affect on amotivation. This revised model of amotivation in schools has therefore driven the research contained in this thesis into understanding the four amotivation dimensions further.

The first dimension of amotivation is ‘deficient ability beliefs’ and encompasses the idea that people have an expectation that their ability is too low to accomplish certain tasks. This notion is linked to self-efficacy, which is how competent an individual feels they are on a particular activity or task. If an individual has low self-efficacy they are less likely to pursue a challenge and perceive failure as being a likely outcome (Bandura, 1982). Hence why studies have shown an association between competence and amotivation in physical education (Murcia et al, 2009; Ntoumanis et al,
2004; Sas-Nowosielski, 2008). In the present thesis, deficient ability beliefs represent student’s views that they are not able to ‘do well’ in PE.

The second dimension of amotivation is ‘deficient effort beliefs’ (Pelletier et al, 1999). This concept looks at whether a student is willing to invest effort into the activity. This is clearly seen through observation in physical activity, more clearly perhaps than in the classroom. In PE, students who lack effort is visible as they may be jogging as opposed to sprinting, or walking and standing still during game situations, reluctantly getting involved in physical activity. Therefore, deficient effort beliefs could be linked to ‘learned helplessness’ (Abramson et al, 1978) and ‘social loafing’, which have been two concepts identified as a motivational loss within Steiner’s model of actual productivity (Steiner, 1972). The latter concepts would be seen clearly in a game situation. For example, students would look to play a position in football where they would be required to do very little and purposefully not participate fully in the game. This lack of involvement could be due to the student not believing in their ability and that they are unable to sustain the effort required of them to fulfil the activity.

The third dimension is ‘insufficient task values’, or in other words, students not valuing the activity they are doing in PE. For example, do students understand why they are practicing a certain skill and/or value the importance of participating in physical activity at school? Ntoumanis (2001) found that amotivation was evident when children felt they were ‘wasting their time’ in PE lessons. Clearly, if pupils do not understand the importance of the task they are doing in the lesson then one may expect amotivation to increase. This encompasses the concept of internalisation (Deci, Eghrari, Patrick, & Leone, 1994). Deci et al (1994) suggested that internalisation was a progressive process and that it takes time for students’ external regulations to become internal. It takes time for the student to value the task and for the activity to satisfy the needs for autonomy, competence and relatedness. You would expect most students to be externally regulated before the activity because they are being told to participate by the teacher and therefore may not have chosen to do the activity based on their own internal regulations. Hagger and Chatzisarantis (2007) identified practical recommendations that teachers must follow to facilitate the process of internalisation. For example, a meaningful rationale must be provided to the students as to why they are doing the activity, especially if the activity has no interest to the student.

The last dimension of amotivation is ‘unappealing task characteristics’. The task itself must be interesting for the student so that they are more likely to engage in the
activity. If they deem the task as boring and tedious they are more likely to be amotivated (Ntoumanis, 2001; Ntoumanis et al, 2004). Standage and colleagues (2005) also found that if the task is too challenging for the student, then it may also lead to amotivation as individuals may lack the belief that they can accomplish the challenge and do not want to take risks due to the fear of failing. However, the results of the latter study were insignificant so no conclusions can be drawn. Teachers may be able to influence students’ amotivation depending on the quality of their teaching. It is deemed as ‘good practice’ to plan challenging lessons for students, but only within students’ capabilities (Whitehead, Pemberton, & Corbin, 1990). It therefore may be reasonable to suggest that ‘bad practice’ is where teachers are setting tasks that are too challenging and impossible to accomplish, consequently facilitating amotivated behaviours.

**Amotivation in physical education**

Limited studies have been conducted to specifically examine amotivation among children in physical education. In the educational context, Legault et al (2006) recognised that school is a unique environment and confirmed that ability beliefs and effort beliefs have a direct impact on students’ amotivation. Unfortunately the findings cannot be generalised to physical education as the PE environment provides a very different research setting from ‘academic’ subjects. PE is predominantly taught either outside in an open environment such as a playground or field, or in a more closed setting such as a gym or sports hall. Shen, Wingert, Weidong, Sun and Rukavina (2010a) was the first known quantitative study to assess amotivation in physical education by adapting and validating the Academic Amotivation Inventory (AAI) into a physical education setting. The results confirmed that the Amotivation Inventory in Physical Education (AI-PE) was an appropriate measurement of the four dimensions of amotivation: deficient ability beliefs, deficient effort beliefs, insufficient task values, and unappealing task characteristics.

In PE, amotivated individuals may lack enthusiasm in lessons, which might signify boredom, they might show ‘avoidance’ behaviours such as continually forgetting to bring their PE kit as an excuse to not participate and their attendance in the PE lessons may be low (Ntoumanis et al; 2004). They may also show signs of incompetence (Bandura, 1986) and learned helplessness (Ntoumanis et al; 2004) and failure to value the activity (Ryan, 1995). Performance goals and social approval goals have also been linked closely with amotivation (Papaioannou, Tsigilis, & Kosmidou,
2007) together with teacher’s motivational strategies within a physical education lesson (Ntoumanis et al; 2004; Taylor & Ntoumanis, 2007).

A study conducted by Ntoumanis and colleagues (2004), was one of the first qualitative studies on amotivation in the PE setting. They aimed to examine the major causes of amotivation, how it is demonstrated in PE lessons and how amotivation could be eliminated. They identified the main causes of amotivation as being ‘learned helplessness beliefs’, ‘low need satisfaction’, and ‘contextual factors’. Learned helplessness beliefs encompassed students who did not value the importance of the subject and felt PE did not have a purpose. Low need satisfaction categorised those students who had low autonomy. For example, participating in PE because they have to and not being able to choose the activities they take part in. This higher order theme also identified students who had low relatedness as a cause of amotivation. For example, participants with low relatedness did not interact well with others in their class and were not in a class with their friends. Contextual factors related to the poor teacher-student relationship, a low mastery climate (limited focus on skill improvement) and a high performance climate (focus being on the better players), as well as the style of teaching and the poor physical environment. A limitation of this study was that interviews were conducted at one time point and subsequently may be an unreliable account of students’ views and their subsequent amotivation score. Longitudinal qualitative studies are therefore needed to provide more accurate data and to gain a more comprehensive understanding of amotivation.

The above study supports SDT, which postulates that if the needs of autonomy, competence and relatedness are not met then there is the possibility individuals will experience amotivation (Deci & Ryan, 2000). A recent study by Ntoumanis, Barkoukis, & Thøgersen-Ntoumani (2009), investigated motivational changes among students in Greece to participate in PE and investigated the causes of any change over three years. They found that students with lower competence need satisfaction reported higher mean amotivation scores. These students were less likely to play sport outside of school and were predicted to lead sedentary lives as they developed into adulthood as a consequence. Furthermore, Murcia and colleagues (2009) established a connection between SDT and the importance that pupils place on PE. The results identified that as students’ perceptions of autonomy, competence and relatedness increase, and therefore become more self-determined, they regard PE as being more important. The results showed amotivation correlated negatively with the importance placed on PE classes.
Previous studies have also shown that meeting basic psychological needs and high self-determined motivation were connected with positive consequences in PE, such as effort (Ferrer-Caja & Weiss, 2000), intention to be physically active (Ntoumanis, 2001), higher concentration and seeking more challenges (Ntoumanis, 2005). The research to date highlights the importance of being self-determined. Therefore, if students are experiencing a state of amotivation in PE lessons then an understanding into the antecedents and consequences of amotivation is necessary, and subsequently has guided the aims of this study.

**Possible antecedents of amotivation**

**Need support**

The goal of the research so far on SDT in physical education has been to explore the social circumstances that promote the three psychological needs of autonomy, competence and relatedness. Social circumstances may in turn either satisfy or thwart these psychological needs and subsequently promote or hinder motivation. Therefore, the social context has been an interesting part of SDT research, and although the social context may not be directly related to motivation, motivated behaviours may be mediated by the satisfaction and/or thwarting of the three psychological needs.

Contemporary physical education research has primarily examined social contexts such as the predictive utility of need supportive environments on individuals’ need satisfaction and findings have shown perceptions of need support to be a positive predictor of psychological need satisfaction (Standage et al, 2005). Moreover, Ryan and Deci (2002) suggest that when these needs are nurtured and satisfied within the environment, self-determination and psychological well-being are promoted. Conversely, when these needs fail to be supported, or are thwarted, psychological well-being disintegrates. It is important to note that SDT proposes that all three needs have to be satisfied to increase self-determination (Ryan & Deci, 2000). Past studies have shown the three needs to predict self-determined forms of motivation when they are combined as one variable ‘need satisfaction’ (Ntoumanis, 2005; Standage et al, 2006) as well as when they are explored independently as three separate needs (Standage et al, 2003). Nonetheless, what is important in the study of amotivation is the relationship between perceptions of need support, need satisfaction and/or need thwarting and ill being.

In the PE context, educational professionals have a challenging task in motivating students to be active. Many students in schools engage in PE because they
have to and many students may still be at the stage of preinternalisation, whereby they have not yet internalised the activity in order for the activity alone to satisfy their needs. Physical educators therefore, may be able to facilitate the internalisation process by creating need supportive environments to increase need satisfaction and more self-determined behaviours (Ryan & Deci, 2000). By providing supportive social environments PE settings can become more autonomously motivating, valued and enjoyable.

To facilitate autonomy it has been hypothesised that social contexts should support choice, enable individuals to initiate their behaviours and minimise controlling instructions that dictate one’s actions and performance (Deci & Ryan, 1985; Reeve, Deci, & Ryan, 2004). In contrast, controlling environments, which pressurise individuals and are predominantly authoritarian, undermine positive outcomes and may lead to more maladaptive outcomes (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009). In PE settings, the PE teacher may try and maximise the opportunity for choice by allowing students to choose activities they wish to partake in throughout the school year. This method is extremely popular in UK schools in the senior years (16-18 years) due to trends showing motivation and engagement in PE declining as students progress up the school (Chapter I). Educational practitioners should listen to their students and ensure that the optional activities provided are meaningful and personally important to the students. By involving students in the decision making process when planning the PE curriculum, teachers may help support and increase students’ autonomy. However, providing students with choice over the activities may not be practical for PE teachers for all age groups. Younger students may still need to develop their skills in a number of different areas, and therefore the types of activities students participate in are often dictated to by the PE teachers. However, allowing students to explore their own ways of executing skills in game situations can still provide choice in lessons. Students can also experience volition through ‘guided discovery’, which is a style of teaching used by PE teachers to allow students to be more creative in lessons. For example, encouraging students to create their own game with their own rules, tactics and/or practices, which subsequently utilise specific skills that have been taught. Research has also demonstrated guided discovery teaching styles in PE to result in more cognitive and affective responses amongst students (Morgan, Kingston, & Sproule, 2005).
Another component of an autonomy supportive environment is providing a meaningful rationale for the activity, especially when it is perhaps deemed as uninteresting to some students in the class. Meaningful rationales provide a basis for students to understand why particular skills, activities and subsequent target behaviours are important. For example, conveying the health benefits of cross-country may help to promote the personal value of the activity and increase the process of internalisation. Deci and colleagues (1994) conducted a laboratory study and found that by providing a meaningful rational for an uninteresting activity, alongside minimising controlling behaviours and showing empathy towards others’ feelings, helped to promote internalisation and integration. Therefore, PE teachers need to acknowledge the concerns students may have with regard to the requested behaviour (Koestner, Ryan, Bernieri, & Holt, 1984). For example, if a teacher says, “I know running may not be much fun and a bit repetitive, but if you can try and run for at least 15 minutes you will begin to improve your personal fitness and well-being.”, students will feel they are being understood and accepted. Teachers should try and limit controlling language such as “you should…” and “you must…”, which has been acknowledged in past research as being related to extrinsic forms of motivation (Oliver, Markland, Hardy, & Petherick, 2008). Instead, teachers should focus on supportive language such as “you can try to…” in order to portray a sense of choice over students’ actions.

In educational research, students’ perceptions of autonomy support have been associated with satisfaction of autonomy, competence and relatedness (Taylor & Ntoumanis, 2007; Vierling, Standage, & Treasure, 2007) and an increase in self-determination (Perlman & Webster, 2011; Standage et al, 2005), together with positive learning outcomes such as higher levels of physical activity (Perlman, 2013) and higher levels of learning (Black & Deci, 2000). Furthermore, Reeve and Jang (2006) conducted a study to investigate whether autonomy supportive teaching styles correlate positively with students’ perceptions of autonomy, and likewise whether controlling teaching styles correlate negatively with students’ perceptions of autonomy. The findings highlighted that several instructional behaviours favoured by teachers with an autonomy-supportive teaching style did indeed correlate positively with students’ perceptions of autonomy. Such behaviours included listening to students, giving students time to work independently and having the opportunity to talk, praising improvement of a skill, encouraging effort, being responsive to students’ questions, supporting students who are having difficulty and acknowledging students’ concerns.
and interests. The behaviours they found to be controlling and consequently correlate negatively with student autonomy perceptions were: not allowing students to solve problems independently but instead giving answers to solutions before students have had time to discover the answer for themselves, uttering commands and controlling language such as “should” and “must” and trying to dictate and direct students learning in a prescribed manner. However, one criticism of the latter study is that the investigation was carried out on seventy-two pre-service teachers recruited from a university who were allocated the role of ‘teacher’ or ‘student’. Therefore, it is difficult to apply the findings to a school environment with younger students who perhaps are not as co-operative and/or are distracted by other students in the class. Additionally, in the latter study, the ‘students’ were required to solve a puzzle under the instructions of the teacher and then complete a questionnaire to assess perceived autonomy support and interest-enjoyment. However the instructional task only lasted ten minutes, which does not reflect the time endured by students in a lesson. Future studies would do well to explore teachers’ instructional styles in a secondary school setting and over a period of time, to see if perceptions of autonomy support change throughout a lesson or school term.

It has been recognised by SDT that competence is also hugely important for motivated behaviour (Deci & Ryan, 1985) and is essential for healthy development and optimal functioning. It has been assumed therefore, that without competence, one would be amotivated (Deci & Ryan, 1985). In PE, students’ perceptions of competence may be facilitated by encouraging students to self-reference standards rather than normatively reference in competitive situations, whereby student’s evaluation of their own performance is dependent on the performance of others in the class (Ames, 1992). The provision of structure has also been noted in SDT as being important to competence satisfaction (Markland, Ryan, Tobin, & Rollnick, 2005). Structure in schools, for example, consists of teachers providing clear learning objectives (Jang, Reeve, & Deci, 2010) and setting students realistic targets in an autonomy-supportive way in order to develop competencies and improve motivation to learn (Reeve & Jang, 2006). Deci and Ryan (1985) also noted that practitioners should carefully select tasks that are challenging yet suit an individual’s competencies. Tasks that are deemed as too easy may evoke boredom and tasks that are deemed as too challenging may lead to anxiety (Deci & Ryan, 2002) and perhaps feelings of learned helplessness. If teachers provide students with regular positive and constructive feedback in lessons, they may help to
support students’ progress and their beliefs that the specific tasks set are attainable. Moreover, by offering step-by-step guidance to help students build on their skills, teachers can help to increase competence further (Koka & Hein, 2005; Mouratidis, Vansteenkiste, Lens, & Sideridis; 2008). On the other hand, teachers who are chaotic and have no clear focus to the lesson will cause confusion among students. Students will also find it difficult to progress on tasks if the instructions are not clear and if the feedback received is ambiguous, all of which may lead to a students’ competence declining (Reeve & Jang, 2006). Competence support is therefore imperative for a student to progress their skills and increase their motivation in PE.

Within SDT, a final nutriment to higher self-determination is the psychological need relatedness, which plays a huge role in the internalisation process (Deci & Ryan, 2000). Relatedness entails feeling a sense of belonging from significant others and being cared for. Teachers are key social agents that can help support a students’ relatedness by acknowledging students’ feelings and values, show empathy in a caring manner, and avoid being judgemental (LaGuardia & Patrick, 2008), all of which collectively coincide with autonomy supportive behaviours. One additional element that has been found to foster relatedness in the educational setting is teacher involvement (Connell & Wellborn, 1991). Involvement can be defined as the extent to which significant others commit their time and energy towards their students (Markland et al; 2005). Involved teachers are concerned about their students’ well-being (Sheldon & Filak, 2008) and are willing to provide emotional support when needed (Cox & Ullrich-French, 2010).

There is a vast amount of empirical evidence that collaborates with the assumption that perceived need support has a positive relationship with psychological need satisfaction, higher self-determination and an increase in physical activity and achievement among PE students (Cox & Williams, 2008; Taylor & Ntoumanis, 2007; Zhang, Solmon, Kosma, Carson, & Gu, 2011; Zhang, Solmon, & Gu, 2012). So far we have discussed the importance of autonomy, competence and relatedness being supported by teachers in the educational environment, including PE, and the positive effect need support has on students’ motivation. Therefore one may assume that if perceptions of need support are low, students will experience low need satisfaction and subsequently lower self-determination or amotivation, leading to psychological ill-being.
Shen, Weidong, Sun and Rukavina (2010b) were the first researchers to investigate inadequate need support as a possible antecedent of the four amotivation dimensions in the PE environment. They conducted a study to explore the influence of inadequate social support from teachers on PE students’ amotivation, with particular focus being on the extent to which insufficient autonomy, competence and relatedness support may yield different amotivation subtypes. The researchers also explored the extent to which subtypes of amotivation could predict outcomes such as effort and intention to participate in future PE activities. Participants were aged between 14 and 16 years old and were given a questionnaire during a PE lesson towards the beginning of the summer term. Structural equation modelling analyses showed that teachers’ competence support negatively predicted the four amotivation subtypes. Relatedness support negatively predicted insufficient task values and unappealing task characteristics and autonomy support did not predict any of the amotivation subtypes. Furthermore, deficient ability beliefs and insufficient task values were negatively associated with teacher ratings of student effort and deficient effort beliefs and insufficient task values were negatively associated with future intention to participate in PE.

Shen et al (2010b) have shed light on potential relationships between insufficient need support and the amotivation subtypes in PE and have provided interesting results that need to further be explored in order to understand the complexity of amotivation. For example, the results indicated that inadequate need support may yield different types of amotivation depending on the significance and predictive strength of autonomy, competence and relatedness with the amotivation subtypes. Future research therefore needs to explore further the predictive utility of students’ perceptions of teacher need support on the amotivation dimensions. Deci and Ryan (2002) suggested that if autonomy is thwarted an individual will most likely be extrinsically motivated, but if competence and relatedness is also thwarted, amotivation will occur. More evidence is needed therefore to explore the amotivation subtypes that are greatly influenced by inadequate need support. Nevertheless, a limitation of Shen et al study was the cross-sectional research design. Although the results provide interesting information, the data was collected at one time point. A student may report the teacher providing inadequate need support after a particularly bad lesson they may have endured and therefore may have personal reasons to score the teacher poorly. Likewise, negative responses on the amotivation scale may also be due to having a one
off negative PE experience. In other words, collecting data at one time point may not provide realistic relationships between variables. Future studies should therefore investigate the relationships between inadequate teacher need support and the amotivation subtypes over a longer time period.

**Physical self-concept**

The self can be viewed as multidimensional and hierarchical. A multi-dimensional model of the self describes the self at a broad, global and a domain level. The domain level includes the physical, social and academic self and is related strongly to motivation. The physical domain is the most relevant to the current study and can be further differentiated into distinct sub domains encompassed under the global self (Harter, 1999). For example, the physical self would have sub domains such as perceptions of competence, strength, endurance and appearance. These sub domains can be broken down further into facets and sub facets, for example, competence in a particular sport and a particular skill within that sport (Fox, 1998). The most widely used measurement of the physical self is the Physical Self Description Questionnaire (PSDQ; Marsh, 1994) and is represented by ten unique physical self dimensions: strength, body fat, activity, endurance/fitness, sport competence, coordination, health, appearance, flexibility and general physical self-concept (PSC).

PSC is an important mediator in physical activity. The self-concept is a persons’ evaluation of his or her own qualities in general, or specific domains (Marsh, 1987), and is helpful for understanding an individual’s outlook toward physical activity. Self-concepts are measured via self-report measures (Byrne, 1996). The concept of PSC is similar to individuals’ self-efficacy beliefs (Bandura, 1997). However, the difference is that self-efficacy beliefs are context specific, whereas the beliefs about ones physical self are more generalised and apply to a number of contexts and situations. The physical self plays an important role in daily functioning and well-being and has shown to be correlated highly with body image and self-esteem (Fox, 1997).

Research has consistently shown a positive relationship between the physical self and physical activity (Hagger, Ashford, & Stambulova, 1998; Sonstroem, Harlow, & Josephs, 1994). However, the research may be biased depending on the type of activity that is assessed by the physical self-measurement. For example, if students are required to complete a questionnaire measuring PSC in their PE lessons and the student is currently doing gymnastics as one of their activities, they may have a lower self-
concept at that period of time due to the activity requiring physical conditioning, lean bodies and strength for success.

Research has also demonstrated that PSC in physical education classes improved the levels of physical activity (Marsh, Papaionnaou and Theodorakis, 2006). Marsh and colleagues (2006) compared students’ ability with their classmates in the classroom and reported that students in high ability classes had comparatively low self-concepts. Trautwein, Gerlach and Ludthke (2008), supported these findings in a recent study by investigating the relationship between PSC, teacher assigned grades in physical education classes and free time physical activity. They analysed the positive and negative consequences of students being in a class with above average physical ability students. The study found that students’ PSC reduced if other members of the class were more physically able and the amount of physical activity they did in their free time also reduced (Trautwein et al, 2008). However, it is important to note that although the results indicate that social comparisons have taken place within the class, unobserved variables may have caused or contributed to a reduction in PSC.

The importance of PSC to physical ability has been shown in a recent study looking at 376 gymnast’s self-concept and performance measures in grades 7, 8 and 9 (Marsh, Chanal, & Sarrazin, 2006). They collected the gymnast’s self-concept and performance measures before and after a 10-week gymnastic program. They found that when self-concept was high before the program, their performance measures were also high. Researchers were then able to identify a reciprocal relationship between self-concept and performance. However, the participants were gymnasts and therefore it would be difficult to generalise these results to students of different abilities in the PE class. Research has also shown that perceived physical competence has an effect on an individual’s intention to participate in leisure time activities. Standage et al (2003) found the perceived physical competence of 328 participants (mean age 13.5 years) was associated with their intention to partake in future physical activity. Those individuals who perceived themselves as having low physical self-competence were less likely to engage in leisure time activities.

Research also indicates that perceptions of physical attractiveness are a predictor of global physical self-worth and self-esteem (Fox, 1998, Harter, 1999). Experiences of low physical attractiveness and high body anxiety may influence students’ motivation to engage in exercise (Crocker, Kowlaski, & Hadd, 2008). Adolescents may exercise more in order to achieve weight loss (Sabiston, Sedgwick, Crocker, Kowalski, & Mack,
and therefore may have high extrinsic motivation. However, some children may avoid physical activity because of the anxiety associated with their negative physical appearance. This can be termed as ‘social physique anxiety’ that occurs as a result of “interpersonal evaluation of ones physique” (Hart, Leary, & Rejeski, 1989, p.96). By avoiding activity they are displaying signs of amotivated behaviour and therefore PSC may be a crucial factor in predicting amotivated behaviours in the PE setting. Low perceptions of physical competence may lead to activity avoidance and decrease the possibility to develop physical self-perceptions that remain positive. This could result in an absence of physical activity outside of school and a reluctance to participate in physical education classes. There are significant gaps in our understanding of the potential relationship between PSC and amotivation. Therefore, one of the aims of the current research is to explore whether the dimensions of amotivation significantly predict PSC in physical education.

Consequences of amotivation in physical education

Student effort

Effort can be foreseen as a type of engaged behaviour with the key markers being effort exertion and persistence (Skinner, Kindermann, & Furrer, 2009). Skinner and colleagues also highlight that students and teachers around them can evaluate their motivational states by looking at the quality of engagement in an activity. Engagement refers to the ‘quality of a student’s connection or involvement with the endeavour of schooling and hence with the people, activities, goals, values, and place that compose it.’ (Skinner et al, 2009, pp. 494). Engagement is a concept that is of interest to researchers as it reflects how students interact with activities and subsequently progress their learning. In PE, students may all be participating in the lesson because they have been told to by their teacher, this does not mean that they are engaged in the activity and actual learning may not be taking place.

Skinner and colleagues (2009) looked at engagement in a classroom setting, not a PE setting, but stressed the importance of engagement to a child’s motivation to learn. The study distinguished between behavioural and emotional engagement. Behavioural engagement such as ‘effort, exertion and persistence, attention and concentration’ was referred to as ‘on task behaviour’. Emotional engagement was reflected in states that showed ‘enthusiasm, interest and enjoyment’. These engagement behaviours are perhaps more recognisable in the PE setting as physical activity may require more effort from an individual than a classroom activity, and certainly more exertion. Persistence
may be lacking due to the individual tiring more easily in PE lessons, but this may not necessarily mean the individual was not engaged. Moreover, enthusiasm and enjoyment is easily expressed in PE as the students have more opportunity to show their emotions and feelings physically and verbally in a less constrained environment compared to the classroom. In the present study, engagement therefore is seen as an important construct that may show a close association with amotivation. One would expect that a student who scores high on amotivation would not be behaviourally and emotionally engaged in PE lessons. In other words, they would display minimum or an absence of effort, low persistence on tasks and little interest or excitement for the activity being taught, collectively defined in the literature as disaffection.

Disaffection is the opposite of engagement and implies that effort, exertion and persistence are absent (Connell & Wellborn, 1991). A student will lack effort and give up on tasks, showing the absence of persistence. This is linked to the theory of learned helplessness (Abramson et al, 1978; Peterson, Maier, & Seligman, 1993). When an individual becomes disengaged on a task, the likely outcome for the individual is boredom and eventual avoidance or drop out of that activity. However, children in schools do not have the option to avoid or drop out of PE, consequently other behaviours may develop to express their disengagement, for example, disruptive behaviour, forgetting PE kit, continually being off task, and failing to comply with the teachers’ instructions. Skinner et al (2009) identified disaffected behaviours in the classroom as being ‘passivity, lack of initiation, lack of effort and giving up, mental withdrawal and ritualistic participation’. Disaffected emotions were identified as tiredness, boredom, frustration, and anger, as well as anxiety if they feel pressured to participate. One might predict that in PE these emotions are more vulnerable as more effort is required in physical activity and tiredness may be a big factor as to how much exertion they put in to the lesson. Some students may be tired but still passively participate and enjoy the lesson due to satisfying their need for relatedness by being with their friends. Frustration in PE may not be due to disaffection in PE, it may simply be the opposite. For example a student may show high effort and persistence on a task and be highly engaged but still be frustrated, either because they are not challenged enough in the lesson, or because they are unable to accomplish a certain skill straight away. Depending on the personality of the individual they would either use that frustration positively by persisting on the skill to improve, or it would have a negative effect and they would give up.
Effort behaviours therefore are a fantastic measure of motivation in PE and researchers have used ‘effort’ as an important indicator of motivational outcomes (Ferra-Caja & Weiss, 2000; Ntoumanis, 2001, 2005; Taylor, Ntoumanis, Standage & Spray, 2010, Shen et al, 2010b; Wallhead, Garn, Vidoni, & Youngberg, 2013). Additionally, Pelletier and colleagues (1999) proposed in their model of amotivation, that an individual’s beliefs about their effort capabilities may be an antecedent of helplessness due to some individuals not being prepared to invest effort in order to achieve a desired outcome. Deficient effort beliefs subsequently constitute one of the four dimensions of amotivation and therefore individuals’ deficient beliefs about their effort capabilities may be a primary indicator of maladaptive behaviours, such as low effort. Ntoumanis and colleagues (2004) support low effort as being an outcome of amotivation. They found during their qualitative analysis of amotivated students’ experiences of PE, that amotivation was displayed by low involvement in the PE lesson, which was manifested via disruptive or passive behaviours. Disruption in girls would be chatting to each other during an activity and disruption in boys would be silly behaviour, which was often off task. Passive behaviours were reported as being more sedentary such as standing still during a volleyball game (Ntoumanis et al, 2004). Non-autonomous forms of motivation in PE, such as amotivation, have also been shown in the literature to negatively correlate with student’s intentions to participate in physical activity in their own time (Standage et al, 2003). It can be a viable assumption that if students are amotivated in PE and consequently do not perceive any reason to engage in PE activities in school, they will continue to display no intention to pursue the same activities in their own leisure time. This is concerning due to the importance of physical activity on an individuals’ health and well-being.

Measuring student effort therefore may be another effective way of measuring amotivation in PE. Obtaining PE teachers’ ratings of student effort, together with students’ own perceptions of effort, can therefore provide supportive evidence to individual student’s ratings of amotivation on the AI-PE. However, researchers need to be aware that students may mask their feelings during a PE lesson and although teachers may perceive students to be persisting with a task and trying hard on challenging activities, it may be the controlled environment they are in that is driving the behaviour. In other words, would some students be as persistent on challenging tasks when participating in the activity in their own leisure time under their own volition? However, despite the concerns, a teacher’s perception of student’s motivated
behaviour has been shown to be a more accurate assessment than a student’s self-report measure of effort and eradicates the potential problems of self-bias from students (Standage et al, 2006). Standage and colleagues (2006) identified in their study that effort and persistence were positively correlated with self-determination and therefore the relationship between amotivation dimensions and teacher perceptions of student effort was explored in the thesis. It would be reasonable to assume, based on the research evidence, a negative relationship between amotivation dimensions and student effort.

**Attainment**

The Achievement Goal Theory (AGT; Nicholls, 1989) is another theory that has been used to analyse pupil’s motivation in schools. Firstly, Nicholls believed individuals either differentiate or undifferentiate the conception of their ability and this may be dependent on age. For example, young children under ten years old may not be able to distinguish between the concepts of luck, effort, task difficulty and ability. Therefore, children believe that through an increase in effort they can improve their ability. However, after the age of ten, Nicholls suggested that children start to understand that ability is not just about putting in effort, and in order to demonstrate competence they have to outperform others and subsequently they use their peers as a measure of success. Dweck and Legget (1988) proposed that individuals’ conceptions of ability influenced whether they adopt ego or task goals when performing a task.

An ego-involving or perceived performance climate has been identified as having an effect on high mean amotivation scores (Ommundsen & Roberts, 1999). A perceived performance climate focuses on competition, winning and rewards, which favours the more competent child (Ames, 1992). A mastery climate on the other hand promotes learning new skills and rewards individuals for their own improvement and development on certain tasks (Ames, 1992). If PE teachers are consistently focusing on performance goals and competitive sport as opposed to a mastery or task-involving climate, the student will not be encouraged to focus on improving their skills and technique, which gives students competence to continue participating in that activity outside of school and into adult life (Ames, 1992).

Currently, PE teachers in the UK formerly assess students using the National Curriculum level descriptors for each activity and judge which level description best fits the pupils’ performance. An attainment level is then awarded to each student, which serves to identify the standard of work the student has achieved. A teacher’s judgement
is based on a student’s strengths and weaknesses in their performance across a range of contexts and over a period of time, rather than focusing on a single piece of work (Department for Education, 2010). Achievement in PE is defined as the progress and success of a student in their learning over time. Achievement is based on whether the student is meeting the knowledge, skills and understanding in the range of activities, able to adapt their knowledge and skills and apply them in different sporting situations, evaluate and improve performance, and understand fitness and health (Department for Education, 2010). It is important however that the teacher gives the students opportunities to demonstrate their progress (achievement) so they are rewarded the most appropriate level or attainment grade.

There have been no studies to date that have directly examined the role amotivation plays on students’ achievement and or attainment in PE. More recent research has focused on educational outcomes and found amotivation and non-self determined types of extrinsic motivation (introjected) to be negatively associated with school dropout rates and persistence (Vallerand & Bissonnette, 1992; Vallerand, Fortier, & Guay, 1997). However, Vallerand and colleagues (1992, 1997), failed to measure academic achievement and the relationship with different motivational orientations. Moreover, cluster analyses, exploring motivational profiles of individuals, have also demonstrated that students who exhibit a higher self-determined profile also demonstrate greater effort, better final performances, and obtained higher PE marks (Ntoumanis, 2002). The lack of research pertaining to the relationship between amotivation and attainment demonstrates a need to further explore the influence amotivation may have on students’ progress and attainment within the PE context.

Summary

This chapter provides a background of research investigating the concept of amotivation. It has addressed a number of motivational theories but has focused primarily on self-determination theory to explore the concept of amotivation in the physical education context. It has drawn upon research from young people in academic as well as PE environments and has evaluated the evidence base regarding possible antecedents and consequences of amotivation, whilst providing avenues for further research. This literature review has shown two major gaps in our knowledge of amotivation in PE. First, there is a dearth of literature that has investigated amotivation as a multidimensional construct and second, there is minimal evidence that has explored possible antecedents and consequences of amotivation. Understanding the role socio-
contextual factors (e.g. teachers’ need support) may play on students’ amotivation, PSC and educational outcomes such as effort and attainment is essential for researchers wishing to provide effective interventions in order to initially increase levels of student engagement in PE and over time increase PSC and physical activity participation into adulthood.

**Rationale for Studies One to Four**

To examine amotivation among adolescence in PE, both quantitative and qualitative methods were used in this thesis to gain a deeper understanding and insight into the possible causes and consequences of amotivated behaviours. For the purpose of this thesis, the qualitative studies (Study 3a and Study 3b) provides an in-depth insight into the experiences and expectations of amotivated students in PE, and some of the themes that were developed represented the multidimensionality of amotivation, which supported the quantitative findings in previous studies. Additional socio-contextual variables were also identified through qualitative analyses, which were then further explored using quantitative methods.

Chapter III describes Study 1, which aimed to continue existing research by assessing the reliability and validity of the Amotivation Inventory in Physical Education (AI-PE). This study also aimed to identify significant relationships between amotivation, PSC and student attainment and therefore extend previous literature by exploring additional variables that may correlate with amotivation. Chapter IV describes Study 2, which builds upon the research in Study 1 and previous literature by exploring the effects of students’ perceived need support from the teacher on the four amotivation dimensions, whilst controlling for PSC. The rationale for including psychological need support was to bring together elements of self-determination theory. This study sought to further previous research by conducting the first longitudinal study to explore potential predictors of change in the amotivation dimensions over time. This study assesses need support as a predictor of change in amotivation over a six-week unit of work in PE, which has not been investigated in previous research.

Chapter V and VI details the qualitative investigations carried out in Study 3a and Study 3b, which aimed to develop new knowledge and insight into amotivated students’ experiences of PE in primary school and students’ expectations of PE in secondary school. Study 3b continued to examine the PE experiences of amotivated students, but this study, in addition, tracked students across the transition from primary to secondary school. In contrast to the other studies, the aim of these chapters was to
identify a richer and more comprehensive understanding of the potential changes in amotivation and possible causes of change from the students’ perspective. By using a qualitative approach, the focus of these studies was centered around students’ views as to why they may be ‘turned off’ PE, and enabled a data set to be created that could be analysed both deductively and inductively. Using mixed methods has been proposed as being hugely beneficial for research and has been referred to as ‘transdisciplinary’ research (TDR) whereby researchers from different disciplines work together to address a common problem (Sparkes & Smith, 2014). TDR is characterised by an ‘interpretation or integration of different disciplinary methodologies and, ideally epistemologies’ (Sparkes & Smith, p. 243). By integrating qualitative and quantitative studies in this thesis, different epistemologies are brought together to enable us to understand amotivation in more diverse and enriched ways.

Study 4 therefore completes the research carried out as part of this thesis and is detailed in Chapter VII. This quantitative study builds upon the findings in all of the subsequent studies by including the same variables as Study 1 and 2, but also including an additional variable; peer motivational climate. The rationale for including peer motivational climate was due to peer influence being a consistent theme derived from the qualitative research in Studies 3a and 3b. Additional situational variables were also highlighted in the qualitative studies, such as the type of activities taught, and task and ego oriented climates. Study 4 therefore, aimed to carry out a longitudinal study to explore predictors of change in amotivation across a whole school year, as well as exploring changes in amotivation across a number of different activities.
Chapter III

Study 1

Amotivation in Physical Education: Relationships with Physical Self-Concept and Teacher Ratings of Attainment

Introduction to Chapter III

The literature review detailed in Chapter II highlighted the dearth of research that has explored amotivation in the PE context. The AI-PE has only recently been adapted to measure amotivation as a multidimensional construct in PE and there is little supportive evidence to validate the construct. Furthermore, there is limited evidence that provides insight into potential socio-contextual variables that may relate to amotivation. To address these gaps in the literature, this Chapter details a quantitative cross-sectional study that was employed to support the reliability of the AI-PE as a measure of amotivation and to explore the relationship between amotivation, physical self-concept and attainment. Such variables to date have not been examined alongside the amotivation dimensions and therefore the study detailed within this Chapter provides an insight into these relationships.
**Abstract**

The aim of this study was to assess the reliability and validity of the Amotivation Inventory in Physical Education (AI-PE). In addition, the study sought to identify the relationships between students’ amotivation, physical self-concept, and teacher ratings of National Curriculum attainment levels in PE. Students \((N = 510)\) from a secondary school in South-East England participated in the study by completing a questionnaire during their scheduled PE lesson. Confirmatory factor analysis provided support for the factorial validity of the four dimensional model of amotivation. Hierarchical multiple regression analyses were conducted on a sub-sample of students with moderate to high levels of amotivation in PE \((n = 164)\). The results showed that both physical self-concept (negatively) and attainment (positively) were predicted by students’ deficient ability beliefs. Overall, the findings support the multidimensionality of amotivation and its association with important outcomes in PE.

*Keywords: Amotivation, physical self-concept, attainment, physical education*
Introduction

Physical education (PE) can play an important part in a child’s perception of sport, exercise and physical activity. In England, PE is compulsory from 5 to 16 years of age, and is regarded as extremely important in schools as it provides children with the knowledge and skills to sustain physical activity in the future (Sas-Nowosielski, 2008). Obesity levels are rising in the UK, particularly among children, and therefore schools need to accept that they play a large part in a child’s health (Department of Health, 2010). The Childhood Obesity National Support Team (CO NST) is concerned that even if schools meet the government target of two hours of physical education per week, pupils are not sufficiently physically active in those two hours (Department of Health UK, 2010).

Participation levels in PE also decline as children progress through secondary school (DfE: PE and Sport Survey, 2009/10; Vallerand & Bissonnette, 1992). Evidence has shown that in the school year 2009/10, 87% of pupils in years 7-9 participated in 120 minutes of curriculum PE each week, 64% in years 10-11 and only 23% in years 12-13 (DfE: PE & Sport Survey, 2009/10). By the time students reach year 11 (16 years of age), interest for some in physical activity is non-existent, they do not want to participate, and are ‘amotivated’ (Ntoumanis, Pensgaard, Martin & Pipe, 2004). It is important to note that participating in PE at school is not an option. It is compulsory for every child to participate in the lesson unless they have a legitimate reason not to do so. Classes may contain a significant minority of amotivated students, however, it may not be easy to identify these students by observation alone. Understanding the psychological processes that students experience whilst participating in PE is an interesting and complex area that needs to be researched further. Therefore the purpose of the present investigation was to examine amotivation in secondary school PE and to identify important correlates of this understudied construct.

Amotivation

Self-determination theory has been a prominent framework for understanding human behaviour (Deci & Ryan, 1985, 2000) and has underpinned recent research in physical activity and youth (Standage, Duda, & Ntoumanis, 2003, 2005; Standage & Treasure, 2002). Deci and Ryan (1985, 2000) theorised that motivation is a multidimensional construct and encompasses three global types of motivation –
intrinsic motivation, extrinsic motivation, and amotivation that all function on a self-determination continuum.

Amotivation refers to the absence of motivation. Individuals do not want to participate in an activity and make no effort to engage in the behaviour (Deci & Ryan, 2000). In physical education, amotivated individuals may lack enthusiasm in lessons, which might signify boredom. They might show ‘avoidance’ behaviours such as continually forgetting to bring their PE kit as an excuse to not participate, and their attendance may be low (Ntoumanis et al., 2004). They may also show signs of incompetence (Bandura, 1986) and learned helplessness (Ntoumanis et al., 2004) and a failure to value the activity (Ryan, 1995). Performance goals and social approval goals have also been linked closely with amotivation (Papaianou, Tsigilis & Kosmidou, 2007).

The majority of research to date has focused on amotivation as a unidimensional construct. However, Legault, Green-Demers and Pelletier (2006, p580) proposed that ‘...amotivation is itself an entity, a complex and multifaceted process, which is not so much an absence as a broad effect of unmet needs’. Pelletier and colleagues (Pelletier, Dion, Tuson, & Green-Demers, 1999) proposed a model of amotivation and investigated reasons for individuals’ lack of motivation toward environmental protective behaviours. Pelletier and co-workers referred to amotivation as ‘global helplessness beliefs’ (p2485) but argued that an individual is amotivated for more specific reasons. Furthermore, they identified three additional dimensions of amotivation: strategy beliefs, capacity beliefs and effort beliefs. Legault et al. (2006) further developed the multidimensional model of amotivation in an academic school setting, developing a taxonomy of amotivation which entailed four dimensions; deficient ability beliefs, deficient effort beliefs, insufficient task values, and unappealing task characteristics.

The first dimension of amotivation, ‘deficient ability beliefs’, encompasses the idea that people have an expectation of their ability to accomplish certain tasks. In the present study, deficient ability beliefs represent students’ views that they are unable to achieve or ‘do well’ in PE. This dimension can be likened to self-efficacy, as both constructs can be defined as the ‘beliefs in one’s capabilities to organise and execute the causes of action required to produce given attainments’ (Bandura, 1997, p3). If an individual possesses deficient ability beliefs, they may know that certain behaviours will achieve a specific outcome, but will believe they do not have the ability to
successfully carry out the required behaviour (Shen, Wingert, Weidong, Sun, & Rukavina, 2010).

The second dimension of amotivation is ‘deficient effort beliefs’ (Pelletier et al., 1999). This dimension looks at whether a student is willing to invest effort into the activity. Effort represents a more easily visible behavioural component of amotivation, e.g. jogging as opposed to sprinting, and standing still during game situations. The third dimension is ‘insufficient value placed on a task’, or in other words, whether students value the activity they are doing in PE. Do they understand why they are practising a certain skill for example? Do they value the importance of having to participate in physical activity? Ntoumanis (2001) found that amotivation was evident when children felt they were ‘wasting their time’ in PE lessons. The last dimension of amotivation is ‘unappealing characteristics of the task’. The task itself must be interesting for the student so that they are more likely to engage in the activity. If they deem the task as boring and tedious they are more likely to be amotivated (Ntoumanis 2001; Ntoumanis et al., 2004). It has also been found that tasks which are too challenging for students lead to amotivation as they lack the belief that they can accomplish the challenge, and do not want to take risks for fear of failing (Standage et al., 2005).

In the United States, Shen and colleagues (2010) initially assessed amotivation in physical education by adapting and validating the Academic Amotivation Inventory (AAI). The AAI was devised to measure the multidimensional construct of academic amotivation. Shen et al. (2010) provided preliminary evidence that the Amotivation Inventory in Physical Education (AI-PE) was an appropriate measurement tool to assess the four dimensions of amotivation.

**Correlates of Amotivation**

*Physical Self-Concept*

The self can be viewed as multidimensional and hierarchical. A multidimensional model of the self describes the self at a global and domain levels. The domain level includes the physical, social and academic self and is related strongly to motivation (Crocker, Kowalski & Hadd, 2008, p.217). Physical self-concept is an important mediator in physical activity. The self-concept is a person’s evaluation of his or her own qualities in general or specific domains (Marsh, 1987), and is helpful for understanding an individual’s outlook toward physical activity. For example, experiences of low physical attractiveness and social physique anxiety influence students’ motivation to engage in exercise (Crocker et al; 2008).
Adolescents may exercise more in order to achieve weight loss (Sabiston, Sedgwick, Crocker, Kowalski & Mack, 2007), and therefore may have high extrinsic motivation. However, some children may avoid physical activity if possible because of the anxiety associated with their negative physical appearance. This can be termed as ‘social physique anxiety’ that occurs as a result of ‘interpersonal evaluation of one’s physique’ (Hart, Leary & Rejeski, 1989, p96). Amotivation in compulsory PE classes is likely to be linked with lower physical self-concept.

**Attainment**

There have been no studies to date that have directly examined the relationship between amotivation and students’ attainment in PE following the National Curriculum guidelines in England. There has, however, been research conducted on the motivational profiles and their relationship with performance in PE. Boiche, Sarrazin, Grouzet, Pelletier, and Chanal, (2008) conducted research into the relationship between different motivational profiles and performance in gymnastics. Findings suggested that the more self-determined profile, i.e., higher intrinsic motivation and higher extrinsic motivation (introjected regulation), achieved higher grades than moderate profiles or less self-determined profiles including amotivation. Unfortunately these findings are not able to be generalised to students in the UK, as students’ performance in PE is not solely graded on their ability to execute certain skills. Students’ grades encompass the execution, selection and application of skills and evaluation of performance.

Sun and Chen (2010) have recently examined self-determination components and learning in middle school physical education and found that amotivation negatively related to knowledge improvement, but no relationship was found with motor skill achievement. In educational contexts, self-determined motivational regulations have been associated with a range of outcomes. Intrinsic motivation has been found to contribute to better academic performance (Deci & Ryan, 1985). However, less research attention has been directed to the role of amotivation in determining educational outcomes.

The reasons why children are amotivated in physical education classes need to be understood so that effective interventions can be developed. A deeper understanding of amotivation in PE is required in order to ultimately increase participation levels in sport and exercise at school and beyond. There is a dearth of literature on amotivation in youth physical activity. Therefore, the first aim of the present study was to validate the ‘Amotivation Inventory-Physical Education (AI-PE) that has been adapted from
Legault and colleagues (2006) and initially tested by Shen and colleagues (2010), and to confirm whether the four dimensions of amotivation can be supported in PE. Students’ self-reported emotional and behavioural engagement and disaffection were also measured to examine the concurrent validity of the AI-PE. The second aim of this study was to test the predictive utility of the four amotivation beliefs in understanding students’ physical self-concept and attainment in PE.

**Method**

**Participants**

Participants ($N = 510$; 217 boys, 293 girls) were recruited from a mixed comprehensive secondary school in the southeast region of England. Ages ranged from 11 to 16 years (16-17 years ($n = 72$); 15 years ($n = 86$); 14 years ($n = 146$); 13 years ($n = 101$) and 12 years ($n = 105$); boys’ mean age = 13.6 years; girls’ mean age = 14.0 years). The majority of students were of middle socioeconomic status from a range of ethnic backgrounds including Caucasian, African American, Nigerian, Asian and Greek.

Students participated in physical education classes twice per week from 11-14 years of age (key stage 3). Between 15 and 16 years (key stage 4), students participated in one physical education class per week. Classes were of the same sex in most cases, and were taught by a teacher of the same sex as the students. Two classes were mixed sex and were taught by a male teacher. Physical education classes were taught in groups of twenty-five or more and were compulsory for students to attend.

**Measures**

**Amotivation in Physical Education.** The Amotivation Inventory for Physical Education (AI-PE; Shen et al., 2010) was used to measure students’ amotivation. The AI-PE consists of 16 items measuring the four dimensions of amotivation: Deficient ability beliefs (e.g. ‘I don’t have what it takes to do well in PE’); ‘Deficient effort beliefs (e.g. ‘I’m not energetic enough’); Unappealing characteristics of the task (e.g. ‘My PE lessons are not stimulating’); and Insufficient value of the task (e.g. ‘PE is not valuable to me’). At the start of the questionnaire, students were asked to rate on a Likert scale from 1-7 (1 = never; 7 = always), how often they experienced a lack of motivation to do PE lessons (cf. Legault et al., 2006). They were then asked to rate on a Likert scale from 1-7 (1 = does not correspond at all; 7 = corresponds exactly) each statement that corresponded with their reasons for not wanting to do PE. Preliminary evidence for the reliability of the AI-PE has been provided by Shen et al. (2010).
**Physical self-concept.** Six items were taken from the ‘global physical’ scale on the original ‘Physical Self Description Questionnaire’ (PSDQ) (Marsh, 1994). Participants reported on a 6-point Likert-scale ranging from 1-6 (1= not at all true; 6 = very true). Example items were, ‘Physically I am happy with myself’ and ‘Physically I feel good about myself’. Evidence for the reliability and validity of the PSDQ has been provided by Marsh (1994).

**Attainment in PE.** To determine the PE teachers' ratings of attainment, a sub-sample of students ($n = 230$; 16-17 years ($n = 23$); 15 years ($n = 18$); 14 years ($n = 69$); 13 years ($n = 60$) and 12 years ($n =60$) was assessed at the end of the school year and awarded a National Curriculum (NC) level ranging from 3a to 8a based on their overall performance, effort and behaviour, covering a range of different activities and skills. The NCPE recommends that students are assessed in PE using ‘levels of attainment’. These levels range from 1-8, with level 8 being the highest. Secondary schools in the UK can opt to add sub levels to the assessment criteria to monitor students’ progress more easily by recommending that students improve their attainment grade by two sub-levels per academic year. For example, each level (e.g., level 3) consists of three sub levels (3a, 3b and 3c). A student in year 7 (aged 11-12yrs) should be achieving an average level 3a to 4c in the majority of activities. By year 8 (aged 12-13yrs), a student who achieved 3a in year 7 should be achieving a 4b by the end of year 8. It is, therefore, expected that attainment will show a high correlation with age. National Curriculum sub-levels were recoded using a Likert-type scale from 1 to 12, 1 equalling the lowest level 3c and 12 corresponding to the highest sub level 6a, as this was the highest sub level that was achieved in the current sample.

**Engagement and Disaffection.** A 20-item questionnaire, adapted from a self-report measure in education (Wellborn, 1991; Skinner, Kindermann & Furrer, 2009), was devised to assess students’ behavioural and emotional engagement and disaffection in their PE lesson. Five items were used to measure behavioural engagement, focusing on the students’ effort, attention and persistence whilst participating in PE (e.g., ‘I try hard to do well in PE’). Behavioural disaffection was measured using five items that focused on students’ lack of effort and withdrawal from activities during a PE lesson (e.g., ‘When I am in PE, I think about other things’). Emotional engagement was measured using five items that tapped into students’ emotions to indicate whether they were motivationally involved in the PE lesson (e.g., ‘When I am in PE I feel good’). Emotional disaffection was also measured using five items to focus on the emotions
that may indicate students’ motivational withdrawal from activities in their PE lesson (e.g., ‘When we work on something in PE I feel bored’). Students were asked to rate on a Likert-scale from 1-4 (1 = not at all true; 4 = very true) what statement best represented their opinions.

**Procedures**

Having attained ethical approval for the study and informed consent from the participants, the questionnaires were administered at the beginning of a PE lesson by the PE teacher. Students were informed that their responses would be confidential and that they would have the right to withdraw at any time. Participants were asked not to confer with other participants and to complete the questionnaire honestly. Each participant took approximately 10 minutes to complete the questionnaire.

**Results**

**Factorial Validity of AI-PE**

Amotivation can be described as the feelings of alienation and helplessness in physical education (Ntoumanis et al., 2004). The first aim of the present study was to validate the existing ‘Amotivation Inventory- Physical Education (AI-PE) (Shen et al., 2010) and to provide empirical support for the four dimensions of amotivation. The findings supported the conceptualisation of amotivation being a multifaceted construct (Shen et al., 2010), identifying multiple sources that lead to students’ feelings of alienation. The results of the confirmatory factor analysis supported the factorial validity of the four dimensions of amotivation suggesting that the AI-PE is a reliable and valid measurement tool (Table 3.1). Results also supported the concurrent validity of the AI-PE, whereby emotional and behavioural engagement and disaffection showed significant correlations with all four dimensions of amotivation in expected directions.

The second aim of the study was to explore the relationships between physical self-concept and attainment with amotivation and whether the four amotivation dimensions significantly predicted physical self-concept and attainment scores after controlling for age and gender.

**Descriptive Statistics, Scale Reliabilities and Correlations**

The means, standard deviations, and Cronbach’s alpha coefficients were calculated for each subscale and are presented in Table 3.2. All subscales demonstrated good internal reliability (α > .82) (Kline, 1986). Coefficients for the four dimensions of amotivation ranged from .82 to .92. The four dimensions of the AI-PE each had mean scores below 3.0.
Table 3.1: *Standardised Loadings for 4-Factor Confirmatory Model for 16 items on the AI-PE (Total Sample: N = 510)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have no good reason to do PE</td>
<td>.69</td>
</tr>
<tr>
<td>2. PE is not valuable to me</td>
<td>.78</td>
</tr>
<tr>
<td>3. I have no good reason to do PE in school</td>
<td>.80</td>
</tr>
<tr>
<td>4. PE is not important to me</td>
<td>.80</td>
</tr>
<tr>
<td>5. I don’t have what it takes to do well in PE</td>
<td>.70</td>
</tr>
<tr>
<td>6. I don’t have the knowledge required to succeed in PE</td>
<td>.62</td>
</tr>
<tr>
<td>7. I’m not good at PE</td>
<td>.66</td>
</tr>
<tr>
<td>8. The tasks demanded of me are beyond my abilities</td>
<td>.54</td>
</tr>
<tr>
<td>9. I find that PE is boring</td>
<td>.78</td>
</tr>
<tr>
<td>10. I don’t like PE</td>
<td>.81</td>
</tr>
<tr>
<td>11. I have the impression that it is always the same activities every year</td>
<td>.55</td>
</tr>
<tr>
<td>12. My PE lessons are not stimulating</td>
<td>.65</td>
</tr>
<tr>
<td>13. I’m a bit lazy</td>
<td>.64</td>
</tr>
<tr>
<td>14. I’m not energetic enough</td>
<td>.68</td>
</tr>
<tr>
<td>15. I can’t seem to put the effort in that is required in the lesson</td>
<td>.72</td>
</tr>
<tr>
<td>16. I don’t have the energy to do PE</td>
<td>.51</td>
</tr>
</tbody>
</table>

To explore the relationship between amotivation scores and the other variables, correlations were assessed among the dimensions of amotivation (using the total sample), emotional and behavioural engagement and disaffection, physical self-concept, and attainment (see Table 3.3). As hypothesised, all four dimensions of amotivation were associated positively with emotional and behavioural disaffection (correlation coefficients ranging from .36 to .59) and negatively with emotional and behavioural engagement (correlation coefficients ranging from -.29 to -.64) demonstrating the concurrent validity of the AI-PE. Physical self-concept showed a negative relationship with all four dimensions of amotivation, with correlation coefficients ranging from -.15 to -.37. Attainment was found to positively correlate with the four amotivation dimensions. Correlation coefficients ranged from .15 to .22.
Table 3.2: *Descriptive statistics for the dimensions of amotivation, physical self-concept, emotional and behavioural engagement and disaffection, and attainment in Physical Education (Total Sample: N = 510)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficient AB</td>
<td>2.30</td>
<td>1.26</td>
<td>.86</td>
</tr>
<tr>
<td>Deficient EB</td>
<td>2.47</td>
<td>1.40</td>
<td>.82</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>2.40</td>
<td>1.51</td>
<td>.92</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>2.85</td>
<td>1.52</td>
<td>.84</td>
</tr>
<tr>
<td>Emotional engagement</td>
<td>2.96</td>
<td>0.81</td>
<td>.87</td>
</tr>
<tr>
<td>Behavioural engagement</td>
<td>2.86</td>
<td>0.74</td>
<td>.87</td>
</tr>
<tr>
<td>Emotional disaffection</td>
<td>1.65</td>
<td>0.68</td>
<td>.79</td>
</tr>
<tr>
<td>Behavioural disaffection</td>
<td>2.13</td>
<td>0.82</td>
<td>.85</td>
</tr>
<tr>
<td>PSC</td>
<td>4.30</td>
<td>1.38</td>
<td>.96</td>
</tr>
<tr>
<td>Attainment</td>
<td>5.60</td>
<td>1.84</td>
<td></td>
</tr>
</tbody>
</table>

*Note. AB = Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics; PSC = Physical Self-Concept*

**Hierarchical Multiple Regression Analyses**

A series of hierarchical regression analyses were conducted on a sub sample of participants ($N = 164$) who scored at or above the scale midpoint (4 or above) on the question ‘How often do you experience a lack of motivation to do PE lessons’ (see Table 3.4). This sample was deemed to consist of students with moderate to high levels of amotivation (Legault et al., 2006).

**Predicting PSC from age, gender, and amotivation dimensions**

The results showed that the amotivation model was significant in explaining 9% of the variance of physical self-concept scores once age and gender were taken into account. Deficient ability beliefs was the only dimension of amotivation to significantly predict physical self-concept ($\beta = -.28, p < .001$) (see Table 3.4).
Predicting attainment from age, gender, and amotivation dimensions

The amotivation dimensions accounted for an increase in explained variance of 5.2% for attainment after controlling for age and gender. Age ($\beta = .67, p < .001$) and deficient ability beliefs ($\beta = .21, p < .05$) were the only significant predictors of attainment scores (see Table 3.4). The final model accounted for 44% of variance in students’ attainment.
Table 3.3: Correlations among amotivation, emotional and behavioural engagement and disaffection, physical self-concept (PSC) and attainment scores (Total Sample: N = 510)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deficient AB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Deficient EB</td>
<td>.64**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Insufficient TV</td>
<td>.53**</td>
<td>.51**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unappealing TC</td>
<td>.51**</td>
<td>.59**</td>
<td>.71**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Emotional engagement</td>
<td>-.36**</td>
<td>-.46**</td>
<td>-.57**</td>
<td>-.64**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Behavioural engagement</td>
<td>-.29**</td>
<td>-.48**</td>
<td>-.46**</td>
<td>-.49**</td>
<td>.74**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Emotional disaffection</td>
<td>.42**</td>
<td>.46**</td>
<td>.55**</td>
<td>.58**</td>
<td>-.57**</td>
<td>-.44**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Behavioural disaffection</td>
<td>.36**</td>
<td>.51**</td>
<td>.55**</td>
<td>.59**</td>
<td>-.58**</td>
<td>-.20**</td>
<td>.67**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PSC</td>
<td>-.37**</td>
<td>-.31**</td>
<td>-.15**</td>
<td>-.19**</td>
<td>.30**</td>
<td>.29**</td>
<td>-.28**</td>
<td>-.18**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Attainment</td>
<td>.20**</td>
<td>.22**</td>
<td>.16*</td>
<td>.15*</td>
<td>-.22**</td>
<td>-.26**</td>
<td>.06</td>
<td>.19**</td>
<td>-.19**</td>
<td></td>
</tr>
</tbody>
</table>

Note. ** p<.01
AB = Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics; PSC = Physical Self-Concept
Table 3.4: Hierarchical multiple regressions predicting physical self-concept and attainment (Amotivated Sample: n = 164)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>PSC</th>
<th></th>
<th></th>
<th>Attainment</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>SE</td>
<td>t</td>
<td>R²</td>
<td>β</td>
<td>SE</td>
</tr>
<tr>
<td>Age</td>
<td>-.06</td>
<td>.10</td>
<td>-.03</td>
<td>.09*</td>
<td>.67***</td>
<td>.07</td>
</tr>
<tr>
<td>Gender</td>
<td>-.03</td>
<td>.25</td>
<td>-.33</td>
<td>-.03</td>
<td>-.10</td>
<td>.23</td>
</tr>
<tr>
<td>Deficient AB</td>
<td>-.28***</td>
<td>.08</td>
<td>-3.5</td>
<td>.21*</td>
<td>.07</td>
<td>1.9</td>
</tr>
<tr>
<td>Deficient EB</td>
<td>-.03</td>
<td>.09</td>
<td>-.39</td>
<td>-.13</td>
<td>.07</td>
<td>-1.2</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>-.01</td>
<td>.08</td>
<td>-.06</td>
<td>-.04</td>
<td>.07</td>
<td>-.33</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>.07</td>
<td>.09</td>
<td>.73</td>
<td>-.11</td>
<td>.07</td>
<td>-1.0</td>
</tr>
</tbody>
</table>

Note. *** p<.001, ** p<.01, * p<.05
AB =Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics
Discussion

Factorial Validity of the AI-PE

Amotivation can be described as the feelings of alienation and helplessness in physical education (Ntoumanis et al., 2004). The first aim of the present study was to validate the existing ‘Amotivation Inventory- Physical Education (AI-PE) (Shen et al., 2010) and to provide empirical support for the four dimensions of amotivation. The findings supported the conceptualisation of amotivation being a multifaceted construct (Shen et al., 2010), identifying multiple sources that lead to students’ feelings of alienation. The results of the confirmatory factor analysis supported the factorial validity of the four dimensions of amotivation suggesting that the AI-PE is a reliable and valid measurement tool. Results also supported the concurrent validity of the AI-PE, whereby emotional and behavioural engagement and disaffection showed significant correlations with all four dimensions of amotivation in expected directions.

The second aim of the study was to explore the relationships between physical self-concept and attainment with amotivation and whether the four amotivation dimensions significantly predicted physical self-concept and attainment scores after controlling for age and gender.

Physical Self-Concept

Results from the present study indicated that certain dimensions of amotivation negatively predicted physical self-concept. This finding is in line with the initial hypothesis, and is supported by Deci and Ryan (2000) who mention the ‘struggle for body control’ (referring to social physique anxiety) as being an outcome of deficiencies in self-determination. Therefore, the low feelings towards the physical self in PE may be a consequence of amotivation, in particular ‘deficiency in ability beliefs’, which the present results show to be highly significant in predicting physical self-concept.

In the present study, deficiency in ability beliefs represented whether a student felt they were unable to ‘do well’ in PE, and therefore a student who believed they did not have the ability to achieve in their PE lesson, would be likely to have a low physical-self concept and subsequently will have a negative evaluation of themselves physically in different contexts and situations. A consequence of this may be a reluctance to get involved in an activity. Thus, the relationship between amotivation and sense of physical self is likely to be reciprocal over time. Future work using a longitudinal design should attempt to identify the relative strength of these bidirectional associations.
A student’s perception of their ability may be influenced by the ability of others in their PE class, such that physical self-competence decreases if other students are more able physically (Trautwein, Gerlach & Ludtke, 2008). Teachers therefore need to be aware that mixed ability classes may serve to lower students’ sense of physical competence.

**Attainment**

In the present study, all four dimensions of amotivation positively correlated with teacher-rated attainment. However, ‘deficiency in ability beliefs’ was the only dimension that positively predicted attainment in the regression analysis. This implies that students who perceive deficiencies in their ability are, in fact, receiving positive judgements of attainment from their PE teacher. The secondary school that was used in the present study divided students into mixed ability groups for their PE lessons. Some of the students who were awarded a high attainment level from their teacher may self-report low motivation due to not feeling as able as others in the class. Some students may feel that performing better than their classmates is an improbable task. The student however, may still meet the criterion assessment criteria and therefore achieve a high national curriculum level. In addition, students’ perception of their ability in class may be inconsistent with their teachers’ judgements (Furrer & Skinner, 2003).

There may be several moderators of the relationship between amotivation and outcomes in PE. For example, achievement goal theory (Nicholls, 1989) interprets what drives student motivated learning behaviour in the academic setting and may help further explain why deficient ability beliefs account for significant variance in physical self-concept. Research has found that students in secondary schools (Walling & Duda, 1995) can be identified as task-and ego-oriented. Walling and Duda (1995) found that students with a high ego-orientation avoided difficult learning tasks and attributed their successes or failures to their ability.

In addition, Sarrazin and colleagues (2002) focused on the effects of task-involving versus ego-involving motivational climate created by the coaches. A task-involving climate emphasised learning and team co-operation in contrast to an ego-involving climate that focused on winning and rivalry between team members (Ames, 1992). The study found that athletes who dropped out from training perceived their coach to be less task involving and more ego involving. They also addressed how the motivational climate related to the three psychological needs of autonomy, competence and relatedness, which need to be supported in the environment for an individual to
display self-determined motivation (Deci & Ryan, 2000). Sarrazin et al. (2002) found that the more the athletes perceived the climate as ego involving, the less competent they felt. This may be due to an ego-oriented climate failing to focus on athletes’ skills and progress, thus reducing the chance for them to feel competent. It is therefore important in future research to explore the psychosocial antecedents of amotivation in more detail by focusing on the motivational climate fostered by the PE teacher and students’ perceptions of the teachers’ need support.

Self-theories of ability may provide another interpretation of students’ perceptions of ability. Dweck (1999) stated that incremental beliefs (the attribute is viewed as changeable and malleable) and entity beliefs (the attribute is viewed as fixed and stable) determine the adoption of achievement goals. Children who hold incremental beliefs are more likely to adopt a task goal orientation (Hong, Chiu, Dweck, Lin & Wan, 1999) and those children who hold entity beliefs are more likely to adopt an ego-oriented achievement goal (Mueller & Dweck, 1998).

These findings were supported by Wang, Chatzisarantis, Spray and Biddle (2002) who found that task orientation was associated with positive forms of self-determination and a belief that ability could be changed through learning. Biddle, Wang, Chatzisarantis and Spray (2003) looked at the relationship between amotivation, goal orientations and sport ability and found that entity beliefs directly predicted self-reported amotivation but no relationship was found with ego goals and amotivation. In conclusion, if students believe their ability is not stable they then will appreciate that if they invest effort into the activity they will improve and subsequently will enjoy PE more. If they believe their ability is unchangeable then they may become frustrated and amotivated.

The finding that ‘deficiency in ability beliefs’ positively predicted attainment may be explained by the assessment criteria that were used by the PE teachers in the study. The attainment levels that the teachers awarded students represented an average score determined across a number of different activities over the academic year. Therefore, attainment scores may not have produced a reliable correlation with amotivation as students reported their amotivation levels at one point during the summer term, rather than at different points across a number of activities over the year. In future studies, teachers should be asked to award the current level at which the student is performing, at the time of completing the amotivation questionnaire.
Limitations, Future Research and Conclusion

Limitations of the present study need to be recognised when drawing conclusions. First, the study used a cross-sectional design and future longitudinal research needs to be conducted to examine changes in amotivation over time with concomitant changes in outcomes in order to determine the direction and strength of influence. It is possible that changes in physical self-concept and attainment impact on students’ amotivation and the bidirectional relationships need to be explored further using a larger amotivated sample.

Second, although the National Curriculum for Physical Education (NCPE, 2000) requires teachers to adopt a conscious focus on assessment and to make judgements on students’ overall performance, there is no statutory requirement for teachers to collect evidence of pupils’ attainment in any particular way. Carroll (1994) indicated that the teacher must be systematic in their assessment, be clearer about the criteria being used, and observe children carefully. Current findings raise the question as to whether teachers are all assessing using the same criteria and/or are carefully observing the students’ performance.

In conclusion, the present study advances the current literature in a number of ways. To date, there has been one study that has validated the Amotivation Inventory Physical Education (Shen et al., 2010) but the authors did not further explore the amotivation dimensions as possible predictors of key variables such as physical self-concept and teacher ratings of attainment. Findings, therefore, facilitate our understanding of the importance of amotivation as a multidimensional construct and the effects of sub-dimensions of amotivation on potentially important outcomes. Overall, the findings point toward the importance of deficient ability beliefs component of amotivation but larger studies of amotivated students are required to ascertain the significance of deficient effort beliefs, insufficient task value, and unappealing task characteristics. Results also highlight a potential disparity between a teacher’s views of students’ attainment and students’ perception of their motivation for the subject.
References


goal theories to predict physical activity intentions. *Journal of Educational Psychology, 95*, 97-110.


Chapter IV

Study 2

The Effect of Perceived Psychological Need Support on Amotivation in Physical Education²

Introduction to Chapter IV

The following chapter continues to develop our understanding of amotivation and extends the research carried out in Study 1 (Chapter III). The results from the latter study supported the multidimensionality of amotivation and suggested that deficient ability beliefs may have a negative impact on an individuals’ physical self-concept. This led to the decision to focus on the PE teacher, as they primarily have responsibility in lessons to enhance students’ ability beliefs by creating a positive environment, which focuses on improving skills and offering encouragement and constructive feedback throughout the learning process. Therefore, based on self-determination theory (Deci & Ryan; 1985, 2000) which states that an individuals’ three basic psychological needs of autonomy, competence and relatedness need to be satisfied in order to fully internalise the activity and be intrinsically motivated, a decision was made to examine the influence of the teacher in supporting these three needs in PE. Self-determination theory hypothesises that if the need for autonomy, competence and relatedness are not supported then an individual may become amotivated. Research on specific needs such as autonomy has also supported this theory with findings demonstrating low autonomy support may lead to maladaptive behaviour in educational settings (Reeve, 2009). The present study also extends the research in Study 1 by continuing to explore the relationship between amotivation dimensions and physical self-concept. Additionally, Study 1 highlighted the limitations of conducting cross-sectional research and therefore the present study carried out a longitudinal design to explore changes in amotivation over time rather than at one time point.
Abstract

Physical educators have a responsibility to create a learning environment that is viewed as supportive of students’ psychological needs and which helps reduce amotivation. The aim of the current study was to examine the effects of students’ perceived need support on four dimensions of amotivation in Physical Education (PE) (deficiency in ability beliefs, deficiency in effort beliefs, insufficient task values and unappealing task characteristics). A longitudinal design was employed with three assessment points over a six-week unit of work in cricket. Surveys were conducted with 162 boys (Mean age = 14 years, \(SD = 0.87\)) over three consecutive PE lessons in weeks one, three and five. At the start of the study, multilevel modelling analyses showed all three types of perceived need support negatively predicted unappealing task characteristics and insufficient task values. Over time, perceived autonomy, competence and relatedness support negatively predicted change in unappealing task characteristics but did not significantly predict change in deficiency in ability beliefs, deficiency in effort beliefs and insufficient task values. Overall, the findings suggest that if students perceive their teacher to provide inadequate support for their basic psychological needs, PE tasks become less appealing over time, thus reinforcing the importance of teachers in ameliorating the development of specific amotivated behaviours in PE.

*Keywords:* Amotivation, perceived psychological need support, physical education.
Introduction

There is evidence in the literature to suggest that lack of physical activity in children can seriously affect their physical health, including risk of diabetes, high blood pressure, poor bone health and obesity (Gutin et al; 2004). For many children, school is the main environment for being physically active through physical education (PE) lessons and extra-curricular activities (Biddle et al; 1998). Therefore, schools offer an opportunity for teachers to deliver physical activities in a safe and structured way within a supportive environment (National Association for Sport and Physical Education; NASPE, 2005). The PE context provides the foundation for young people to learn how to be active and lead a healthy lifestyle (Biddle et al; 1998). However, health surveys in England have identified among boys a significant decrease over time in the proportion meeting physical activity guidelines. The decline has been increasingly marked in the older age group with 28% of boys meeting the government guidelines in 2008 compared with 14% in 2012 (Health Survey for England (HSE), 2012). One reason for these results may be the decline in boys’ motivation in PE over time. Sallis and Mackenzie (1991) argued that positive student motivation in PE could promote active healthy lifestyles in schools and beyond. On the contrary, if boys lack the motivation to engage in the lesson, maladaptive behaviours and negative student outcomes may follow such as disengagement, low participation and avoidance behaviours (Legault et al; 2006; Ntoumanis et al; 2004). Thus, physical educators are a powerful agent in developing students’ self-determined motivation and to empower engagement in learning (Ryan and Deci, 2009).

According to self-determination theory (SDT; Deci and Ryan, 2000), teachers can influence a student’s motivation by either supporting or thwarting the basic psychological needs of autonomy, competence and relatedness. In the PE context, research has started to show that teaching behaviours that do not support the basic needs and/or thwart these needs are related to amotivation and subsequent maladaptive student outcomes (Ntoumanis et al; 2004; Shen et al; 2010b; Standage et al; 2005). According to Deci and Ryan (2002), amotivation is a psychological state whereby an individual is unable to identify an association between their behaviour and the outcome of their behaviour, and amotivation is therefore an absence of motivation. Amotivated individuals in PE tend to perceive the lesson to be of low importance, are unhappy with the teaching style, and display behaviours such as forgetting PE kit and low attendance.
Given that educational research has shown a decline in physical activity among adolescents (Malina & Katzmarzyk, 2006), it is important to explore socio-contextual factors such as types of teachers’ need support that may be temporal antecedents of amotivation. For example, SDT literature has highlighted three adaptive factors of the social environment (such as teachers’ interpersonal style) that may influence individuals’ psychological needs (Reeve, Deci & Ryan, 2004). These are autonomy support, structure and interpersonal involvement. Autonomy support refers to behaviours from those in a position of authority (e.g. teachers) that allows students provision of choice and freedom of expression. In addition, students’ views are acknowledged, and minimal pressure is ensued (Deci et al; 1994). Structure refers to whether teachers provide clear instructions, set clear objectives and challenging goals, and are consistent and predictable (Skinner & Edge, 2002). Finally, interpersonal involvement refers to the willingness of teachers to provide empathy, affection, time and energy to the students they interact with (Deci & Ryan, 1991; Reeve et al; 2004).

Work by Tessier and colleagues (2010) have identified the importance of the aforementioned teacher behaviours by finding an increase in students’ need satisfaction self-determination and engagement in PE.

**Amotivation**

Understanding the sources of students’ lack of motivation is imperative to the promotion of life long engagement and participation in physical activity. According to self-determination theory, individuals may be motivated to participate in sport and exercise activities for intrinsic and/or extrinsic reasons (Ryan & Deci, 2009). People who are intrinsically motivated represent the highest form of self-determination and are fully self-regulated having internalised the behaviour, engage in activities out of interest and volition, and do not need external influences to encourage persistence (Deci & Ryan, 1985, 2000). In contrast, extrinsic motivation refers to behaviours that are determined by factors outside of the activity itself. SDT identifies four types of extrinsic motivation, which are differentiated by the degree to which motives have become internalised (Ryan & Deci, 2000). Internalisation stems from a mini-theory of SDT, termed organismic integration theory (OIT; Deci & Ryan, 1985), and describes how people accept or ‘take in’ the value of tasks to guide their behaviour. Amotivation represents an absence of motivation and is evident when individuals lack the intention and willingness to engage in a particular behaviour. Amotivation is a complete lack of self-determination and may result if the individual lacks competence, devalues the
activity or is deficient in their abilities to achieve a desired outcome (Ryan and Deci, 2000). As amotivation lies on a continuum, the regulation of behaviour can become more internalised if social environments and key social agents (such as the teacher) support the internalisation process (Deci & Ryan, 2008).

Although the literature on motivation within PE is increasing, there remain limited studies that have explored amotivation explicitly in the PE context. PE is a compulsory subject, and therefore one is more likely to identify amotivated individuals in PE as opposed to extra-curricular activities. Amotivated behaviours may be demonstrated in various ways, for example, failing to turn up to lessons with full PE kit, opting to sit out of activities, playing sedentary roles, displaying a lack of effort, and failing to learn new material (Ntoumanis et al; 2004; Sun & Cheng, 2008).

Recognising the importance of amotivation in the education context, Green-Demers and colleagues, (2008) conceptualised and empirically validated amotivation as a multi-dimensional construct consisting of four dimensions; deficiency in ability beliefs, deficiency in effort beliefs, insufficient task values and unappealing task characteristics. Studies in PE have supported the factorial validity of multidimensional measures of amotivation (Shen et al; 2010a; Vlachopoulos et al; 2013).

Deficient ability beliefs describe students who believe they do not have the ability to do well, and are therefore most vulnerable to being detached from school (Eccles et al; 1993). Deficient effort beliefs are adopted when an individual fails to expend the sustained effort asked of them to perform and maintain the behaviour. In a PE setting, students may be reluctant to get involved in game situations or activities, and opt to play more stationary roles that require less physical effort. Furthermore, Ryan and Deci (2000) included lack of value as part of the definition of amotivation and subsequently insufficient task values comprises one of the four amotivation dimensions. Therefore, if an individual devalues PE they may uphold negative attitudes towards the subject and consequently experience motivational deficits (Wigfield & Eccles, 2000). Finally, unappealing task characteristics are related to feelings of boredom, which have been linked to amotivation in past research (Ainley et al; 2002; Legault et al; 2006; Ntoumanis, 2001; Ntoumanis et al; 2004). Tasks that are deemed as too challenging for students can also induce boredom (Standage et al; 2005). Students are more likely to be enthusiastic if they deem an activity interesting (Hidi & Harackiewicz, 2000), and therefore it is imperative that teachers create a stimulating environment for their students to capture their interest.
Need support

The social environment strongly influences motivation behaviours by supplying “fundamental nutriments” referred to as basic psychological needs; autonomy (a sense of volitional control), competence (effectively interacting with the environment to yield desired outcomes) and relatedness (feeling connected with significant others) (Deci & Ryan, 2000). Basic psychological needs theory (BPNT), another subtheory of SDT, suggests that when these basic needs are supported in our social environment, individuals’ need satisfaction increases which then promotes a sense of self-determination. Thus, teachers have a pivotal role in enhancing more autonomous forms of motivation in PE.

Autonomy support from teachers should intend to foster ‘volitional intentions to act’ so students feel they are in control over their choices and actions (Reeve & Jang, 2006) Teachers may provide students with a range of different ways to solve a problem or complete a task so the student feels they are self directing their behaviour, and as a result increase their levels of self-determined motivation (Ward et al; 2008). In PE for example, teachers would be showing autonomy support by finding ways to increase students’ values towards specific activities, tactics and concepts, via for example providing meaningful rationale for activities and particular tasks. In so doing, students will gain a sense of meaning and control over their actions (Reeve & Jang, 2006). Research needs to explore whether low perceived autonomy support may be closely associated with insufficient task values and consequently help foster amotivated behaviours. Competence support from teachers may involve positive feedback and encouragement during and after the lesson, setting differentiated tasks, allowing sufficient practice time, and helping students to focus on the process of learning a skill rather than the outcome (Alderman et al; 2006). Low competence may be linked to deficiency in ability beliefs and, therefore, one would expect students to experience higher levels of amotivation if the teacher does not support this need. Lastly relatedness support from teachers and classmates has been highlighted in the literature as being an important need that is crucial among students at school (Koka & Hagger, 2010; Perlman, 2010; Vallerand, 2001). Providing opportunities for students to feel connected with their peers and teachers is essential, and the PE context is an environment whereby students have the opportunity to develop positive relationships with others. If teachers demonstrate willingness to care for their students, provide empathy and support for
their feelings towards different activities, and interact with students, then this will help students’ motivational development (Shen et al; 2010b; Standage et al; 2006).

Empirical work in students’ perception of psychological need support and amotivation has been demonstrated by Shen and colleagues (2010b). Shen and co-workers conducted a study investigating the influence of inadequate teacher-to-student social support on amotivation among high-school physical education students in the United States. They particularly looked at the different dimensions of amotivation to see whether the perceptions of need support from the teacher influenced the amotivation subtypes. They found that teacher relatedness support was negatively associated with insufficient task values and unappealing task characteristics; teachers’ autonomy support was not associated with any of the four amotivation dimensions, and competence support strongly predicted all four types of amotivation. However, one limitation of their study was the cross-sectional design, which consequently confines the researchers to only explore correlates of amotivation at one time point. To date, most studies in PE have examined amotivation as a uni-dimensional construct using cross-sectional designs. A more comprehensive understanding of amotivation in PE using a longitudinal perspective is needed to attempt to understand the ways in which students’ perceptions of teacher need support may affect students’ amotivation whilst students gain more experience working with their teacher. One may assume that with effective teaching, students’ perception of psychological need support will increase, together with students’ self-determined motivation. However, this may not be the case, and some students may perceive their teacher to be unsupportive of their needs and subsequently could have a maladaptive effect on students’ behaviour.

The current study, therefore, aimed to shed light on whether low perceptions of psychological need support predicts the development of amotivation over time. Yet recent amotivation research has shown the importance of controlling for confounding influences. Study 1 for example, highlighted the negative relationship between deficient ability beliefs and physical self-concept (PSC). PSC being defined as an individuals’ perception of his or her appearance, body fat, co-ordination and other aspects of the physical self (Marsh et al; 1994) The present investigation therefore controlled for PSC in determining the effects of teacher need support on the amotivation subtypes across a six-week unit of work in PE. A unit of work is a planned sequence of lessons over a short time period (5-6 weeks) that is focused on one activity, and details progression and learning outcomes throughout the unit. Due to limited research on the amotivation
dimensions and inadequate teacher psychological need support, caution was observed in proposing specific hypotheses. However, in line with theoretical predictions it was anticipated that perceived autonomy, competence and relatedness support would be negatively associated with the four amotivation dimensions over time.

**Method**

**Participants**

Participants were recruited from an all boys’ grammar school in southeast England of which 162 boys (mean age = 14 years, SD = 0.87) from Year 9 took part in the study. The majority of students were of middle socio-economic status. Year 9 was chosen for our sample as physical activity in boys during adolescence is declining and the older age group has been marked as the most problematic (HSE, 2012). Participants took part in a minimum of one hour of physical activity per week in the form of a games lesson, and one hour of PE per week on a fortnightly rotation. It was decided that data collection took place in a PE lesson as opposed to a games lesson as PE provides a more structured environment whereby students remain in the same class every lesson and are taught by the same teacher. In addition, all teachers were required to teach a unit of work in the chosen activity (cricket) to ensure all students in all classes were taught the required skills and tactics. Six PE classes of approximately 30 boys in each class took part in the study. All participants were taught a programme of work on cricket which consisted of six lessons over 6 weeks. Two male teachers taught these classes at different times during the week, and individual classes were consistently taught by the same teacher throughout the unit of work. All students had been taught by their class teacher for eight months prior to data collection, and some students would have been taught by the class teacher in previous school years and in extra-curricular activities.

**Measures**

*Amotivation in Physical Education*: To assess students’ amotivation in cricket, the Amotivation Inventory in Physical Education (AI-PE) (Shen et al; 2010a) was adapted. The AI-PE consists of 16 items measuring the four dimensions of amotivation: Deficient ability beliefs (e.g. ‘I don’t have what it takes to do well in cricket’); Deficient effort beliefs (e.g. ‘I’m not energetic enough’); Unappealing characteristics of the task (e.g. ‘My cricket lessons are not stimulating’); and Insufficient task values (e.g. ‘Cricket is not valuable to me’). Students were firstly instructed to state on a Likert-scale (1 = Never to 7 = Always) ‘how often do you feel a lack of motivation to do
They were then asked to rate on a Likert-scale from 1-7 (1 = does not correspond at all to 7 = corresponds exactly) each statement that corresponded with their reasons for not wanting to do PE. Mean scores were then calculated at each time point. Evidence for the reliability and validity of the AI-PE has been supported by Shen et al. (2010a).

**Student perceptions of teacher need support:** Students’ perceptions of autonomy support were measured using a PE modified version of the Learning Climate Questionnaire (LCQ) adapted by Standage et al, (2005). In the present study, four items were extracted from the 15-item LCQ to measure autonomy need support. To measure competence need support and relatedness need support, four items for each variable were adapted from the questionnaire devised by Standage and colleagues (2005). Students were asked to rate on a Likert scale (1 = Not at all true: 7 = Very true) how true each statement was in relation to the PE class they had just participated in and the PE teacher who taught them. Each item was preceded by the stem, “In this PE class…” There were 12 items overall measuring support for three needs; autonomy support (e.g. ‘I feel the PE teacher provided us with choices and options’); competence support (e.g. ‘I feel the PE teacher helped me to improve’) and relatedness support (e.g. ‘The PE teacher supported us’). Mean scores were then calculated at each time point. Evidence for the reliability and validity of the LCQ and the competence and relatedness support items were supported by Standage et al. (2005).

**Procedures**

After obtaining institutional ethical approval, permission to conduct the study was first obtained from the head teacher, followed by parental consent. Letters were sent to parents explaining the aims of the study and their right to reply if consent was not granted. No parent chose this option. All participants completed an informed assent form at the start of the study, detailing the class that they were in and their date of birth. Participants were informed that they had the right to withdraw at any time and all responses would remain anonymous. They were told that there were no right or wrong answers and to answer honestly. All participants were given a multi-section questionnaire at the end of their PE lessons, which took approximately fifteen minutes to complete. Questionnaires were administered in week 1, 3 and 5 during the 6-week unit of cricket in the summer term to measure students’ responses at the beginning, middle and end of the unit. Students were asked for their date of birth at the start of
completing every questionnaire so responses could be matched over the three time points.

**Data analytic strategy**

Descriptive statistics and internal reliability coefficients (Cronbach’s alpha) were first calculated for all study variables across all measurement waves. Given we adapted the AI-PE in the present study to relate to cricket, it felt prudent to check the factor structure. This was done through confirmatory factor analysis (CFA). To explore the relationships between the amotivation scores and the other variables, correlations were assessed at each time point among the amotivation dimensions, perceptions of teacher need support, and PSC. Next, unconditional means models were examined to ascertain the intraclass correlations of all study variables i.e. to determine the proportion of variance explained at different levels. Subsequently, unconditional growth models were tested to identify average patterns of change across the study for each variable.

The main study analyses addressed whether changes in the four amotivation dimensions could be predicted by change in perceptions of teachers’ need support whilst controlling for PSC. Multilevel regression analyses employing MLwiN 2.23 (Rashbash et al; 2009) were used to examine change in student amotivation. This type of analysis is useful when there are missing observations since it does not assume an equal number of measurement occasions for all individuals (Hox, 2002). Level 1 analysis encompassed the repeated observations of amotivation sub-types, PSC, and students’ perceptions of teacher need support nested within students (level 2). Time was centered at wave one, intercepts were allowed to vary randomly across levels and all predictor variables were grand-mean centered. For each dependent variable, the model tested the fixed effects of perceptions of teacher need support and PSC at the start of the study (initial status) and over time. Additional analyses explored whether results differed when not controlling for PSC. Due to finding no substantial change in the results for each analysis, PSC was subsequently removed from the final multilevel models.

**Results**

**Preliminary analyses**

*Factor analysis.* Confirmatory factor analysis (CFA) was employed using EQS (version 6.1; Bentler, 2003) to determine the factor structure of the scale used to measure amotivation. Recent research has found the AI-PE to consist of four correlated
factors (Study 1), representing the four amotivation dimensions. Examination of the fit indices indicated that the data adequately fit the four-factor model (CFI = .95, NNFI = .94, SRMSR = .05, RMSEA = .06). Bentler (2003) proposed that good fit of a hypothesised model to the data is indicated when the CFI is ≥ .95, the SRMR is ≤ .08, and the RMSEA is ≤ .06.

**Descriptives.** The means, standard deviations and internal reliabilities for all variables were calculated for each of the three time points (see Table 4.1). The mean scores for amotivation were below the midpoint suggesting a low amotivated sample and the mean scores for perceived support for autonomy, competence and relatedness were all above the midpoint, suggesting the sample on average felt their needs were being supported by the teacher. All scales were above alpha = 0.82 indicating good internal consistency. Correlations were assessed among all variables at each time point and correlations from the first assessment point are shown in Table 4.2. These analyses revealed that teacher autonomy, competence and relatedness support was significantly inversely correlated with deficiency in ability beliefs, insufficient task values and unappealing task characteristics but no significant correlations were found with deficient effort beliefs.

**Unconditional means models.** Unconditional means models were calculated for each variable to determine the intraclass correlation (ICC) for each variable at the student level. An unconditional means model has no predictors at either level and identifies whether there is systematic variation in the variable worth exploring, as well as whether the variation lies within- or between-individuals (Singer & Willett, 2003). There was sufficient between-person variation in the intercepts (ICCs ranged from .48 to .65). Within-person variation in the intercepts ranged from .35 to .52 across the three time points.
Table 4.1: Means, Standard Deviations, and Reliability Coefficients for all Variables Across the Three Time Points

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 162)</td>
<td>(n = 141)</td>
<td>(n = 130)</td>
</tr>
<tr>
<td>Deficiency in AB</td>
<td>2.16</td>
<td>2.21</td>
<td>2.26</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>1.30</td>
<td>1.31</td>
</tr>
<tr>
<td></td>
<td>0.85</td>
<td>0.82</td>
<td>0.91</td>
</tr>
<tr>
<td>Deficiency in EB</td>
<td>2.27</td>
<td>2.33</td>
<td>2.26</td>
</tr>
<tr>
<td></td>
<td>1.44</td>
<td>1.71</td>
<td>1.29</td>
</tr>
<tr>
<td></td>
<td>0.92</td>
<td>0.96</td>
<td>0.90</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>2.30</td>
<td>2.33</td>
<td>2.45</td>
</tr>
<tr>
<td></td>
<td>1.61</td>
<td>1.71</td>
<td>1.58</td>
</tr>
<tr>
<td></td>
<td>0.91</td>
<td>0.92</td>
<td>0.94</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>2.46</td>
<td>2.59</td>
<td>2.59</td>
</tr>
<tr>
<td></td>
<td>1.45</td>
<td>1.62</td>
<td>1.60</td>
</tr>
<tr>
<td></td>
<td>0.85</td>
<td>0.92</td>
<td>0.93</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>3.61</td>
<td>3.73</td>
<td>3.96</td>
</tr>
<tr>
<td></td>
<td>1.60</td>
<td>1.87</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>0.85</td>
<td>0.91</td>
<td>0.90</td>
</tr>
<tr>
<td>Competence NS</td>
<td>4.86</td>
<td>4.36</td>
<td>4.32</td>
</tr>
<tr>
<td></td>
<td>1.55</td>
<td>1.78</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>0.85</td>
<td>0.89</td>
<td>0.92</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>4.85</td>
<td>4.37</td>
<td>4.29</td>
</tr>
<tr>
<td></td>
<td>1.48</td>
<td>1.76</td>
<td>1.82</td>
</tr>
<tr>
<td></td>
<td>0.86</td>
<td>0.90</td>
<td>0.94</td>
</tr>
<tr>
<td>PSC</td>
<td>4.51</td>
<td>4.54</td>
<td>4.50</td>
</tr>
<tr>
<td></td>
<td>1.25</td>
<td>1.34</td>
<td>1.39</td>
</tr>
<tr>
<td></td>
<td>0.96</td>
<td>0.96</td>
<td>0.97</td>
</tr>
</tbody>
</table>

Note: AB = Ability beliefs; EB = Effort beliefs; TV = Task Value; TC = Task Characteristics; PSC = Physical Self-Concept; NS = Need Support
<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deficiency in AB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Deficiency in EB</td>
<td></td>
<td>.64**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Insufficient TV</td>
<td></td>
<td>.75**</td>
<td>.59**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unappealing TC</td>
<td></td>
<td>.67**</td>
<td>.56**</td>
<td>.79**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Autonomy NS</td>
<td></td>
<td>-.26**</td>
<td>-.14</td>
<td>-.31**</td>
<td>-.40**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Competence NS</td>
<td></td>
<td>-.29**</td>
<td>-.14</td>
<td>-.37**</td>
<td>-.43**</td>
<td>.79**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Relatedness NS</td>
<td></td>
<td>-.24**</td>
<td>-.11</td>
<td>-.31**</td>
<td>-.36**</td>
<td>.81**</td>
<td>.92**</td>
<td></td>
</tr>
<tr>
<td>8. PSC</td>
<td></td>
<td>-.44**</td>
<td>-.31**</td>
<td>-.16**</td>
<td>-.22**</td>
<td>.25**</td>
<td>.23**</td>
<td>.22**</td>
</tr>
</tbody>
</table>

Note: AB = Ability beliefs; EB = Effort beliefs; TV = Task Value; TC = Task Characteristics; PSC = Physical Self-Concept; NS = Need Support

**p < .01
Unconditional growth models. Unconditional growth models, with time serving as the only predictor, showed, on average, non-significant changes in all four amotivation dimensions over the three time points. However, students’ perceptions of autonomy support ($\beta = 0.17$) showed a significant increase over time, whereas competence ($\beta = -0.30$) and relatedness support ($\beta = -0.28$) demonstrated a significant decrease.

Main analyses

Predicting change in amotivation across the unit of work. Conditional growth models (see Table 4.3) were constructed exploring potential changes in the intercept and slope (i.e. rate of change) of the amotivation dimensions and perceptions of need support. With respect to each of the four amotivation dimensions, a series of models were estimated to determine whether students’ perceptions of need support predicted i) between person differences at the start of the study, and ii) between person differences in the rate of change over the course of the six week unit of work. At the start of the study, teacher support for all three needs negatively predicted insufficient task values (autonomy NS ($\beta = .15, SE = .06$), competence NS ($\beta = .17, SE = .06$), relatedness NS ($\beta = .15, SE = .06$) and unappealing task characteristics (autonomy NS ($\beta = .17, SE = .06$), competence NS ($\beta = .19, SE = .06$), relatedness NS ($\beta = .16, SE = .06$). Competence support negatively predicted deficiency in ability beliefs ($\beta = .10, SE = .05$). Deficiency in effort beliefs was not predicted by any of the three types of support ($p > .05$). Over time, however changes in perceived teacher support for all three needs negatively predicted changes in unappealing task characteristics (autonomy NS ($\beta = .08, SE = .04$), competence NS ($\beta = .09, SE = .04$), relatedness NS ($\beta = .09, SE = .04$)) but did not predict change in deficiency in ability beliefs, deficiency in effort beliefs and insufficient task values.
Table 4.3: Final Models of Students’ Perceptions of Teacher Psychological Need Support Predicting Amotivation Dimensions

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Deficiency in AB</th>
<th>Deficiency in EB</th>
<th>Insufficient TV</th>
<th>Unappealing TC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>SE</td>
<td>β</td>
<td>SE</td>
</tr>
<tr>
<td>Initial status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.17</td>
<td>(.09)*</td>
<td>2.30</td>
<td>(.11)*</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>-.06</td>
<td>(.05)</td>
<td>-.04</td>
<td>(.06)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>-.10</td>
<td>(.05)*</td>
<td>-.05</td>
<td>(.05)</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>-.08</td>
<td>(.05)</td>
<td>-.05</td>
<td>(.06)</td>
</tr>
<tr>
<td>Rate of change</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>.04</td>
<td>(.05)</td>
<td>-.01</td>
<td>(.06)</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>-.02</td>
<td>(.03)</td>
<td>-.06</td>
<td>(.04)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>-.01</td>
<td>(.03)</td>
<td>-.06</td>
<td>(.04)</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>-.02</td>
<td>(.03)</td>
<td>-.04</td>
<td>(.04)</td>
</tr>
<tr>
<td>Variance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>.96</td>
<td>(.14)*</td>
<td>1.05</td>
<td>(.16)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>.65</td>
<td>(.06)*</td>
<td>.92</td>
<td>(.08)*</td>
</tr>
</tbody>
</table>

*Note: AB = Ability beliefs; EB = Effort beliefs; TV = Task Value; TC = Task Characteristics; NS = Need Support
β = Beta; SE = Standard Error; *p < .01
Discussion

The purpose of this study was to examine whether change in the four amotivation dimensions was related to change in students’ perceptions of their teacher’s psychological need support during a six-week unit of cricket. There is evidence to indicate that amotivation in PE can lead to maladaptive behaviours such as forgetting PE kit, claiming to be medically unfit and being absent from school (Ntoumanis et al; 2004; Shen et al; 2010a) and that need supportive environments can enhance self-determination (Standage et al; 2005; Standage et al; 2006). However, limited attention has been paid to exploring teacher effects on separate amotivation dimensions over time.

Amotivation and need support

In the current study, perceived teacher support for all three needs negatively predicted insufficient task values and unappealing task characteristics and only competence need support predicted deficiency in ability beliefs at the beginning of the unit of work. Therefore after the first PE lesson (Time 1), students who felt their teacher had provided inadequate support for their autonomy, competence and relatedness valued the cricket lesson less and may have evoked feelings of boredom and disinterest. Furthermore, competence need support emerged to be the strongest predictor of unappealing task characteristics as well as being the only perceived source of support to negatively predict deficiency in ability beliefs. Supporting students’ competence has been stated in the literature as being crucial in forestalling amotivated behaviours (Deci & Ryan, 2002) and aiding the internalisation process, leading to an increase in intrinsic motivation (Ryan & Deci, 2000). Given that teachers are the primary agents to support ability among students and enhance their self-regulation, training needs to be put in place to provide teachers with knowledge as to how to deliver instructions, provide feedback and subsequently foster the student-teacher relationship.

The findings at Time 1 were partially supported by research from Shen and colleagues (2010b) who also revealed that perceived teachers’ competence and relatedness support negatively correlated with unappealing task characteristics. Additionally, Vlachopoulos et al, (2013) examined the validity of the AI-PE by exploring the associations of the amotivation variables with self-determination variables such as needs for autonomy, competence and relatedness. These authors found that competence need support negatively predicted deficient ability beliefs but together with relatedness need support, did not predict unappealing task characteristics or insufficient
task values. Inconsistent findings across studies reinforce that researchers need to further explore relationships between low perceived need support and amotivation.

The findings at Time 1 did not correspond exactly with the results that emerged over time. Perceived teacher need support in all three needs negatively predicted change in students’ unappealing task characteristics over the unit of work but did not predict change in other amotivation dimensions. The results indicate that a six-week unit of work may have been too short to see significant changes between the beginning and end of the study. Nevertheless, if a student feels the teacher is not supporting their need to have control over the decisions they make (low autonomy), not enabling them to confidently interact in the PE setting (low competence), and perhaps unintentionally creating environments whereby they do not feel accepted by their peers (low relatedness), then students are more likely to find the task boring and lose interest. The practical implications for the teacher as a result of these findings are that students may become disengaged from the lesson and may be ‘turned off’ cricket in the future. An important pedagogical understanding for PE teachers is that one student may be amotivated in one activity due to lack of interest (Hidi & Harackiewicz, 2000) but have self-determined motivation in another due to its appeal. The PE curriculum offers diverse physical activities to cater for students’ personal interests and, therefore, it can be a challenging environment for teachers to foster high quality motivation in all students (Sun & Cheng, 2008). Not all activities are intrinsically interesting for everyone. Some students, for example, may not enjoy running, but because it is a worthwhile activity for improving cardiovascular fitness, teachers need to help motivate students by educating them on the importance and value of the task. Future research would do well to explore changes in amotivation dimensions across different activities to help teachers provide additional need support in activities that are less appealing and less valued among students.

Disconfirming our hypothesis, changes in perceptions of autonomy, competence and relatedness support did not significantly predict changes in deficiency in ability beliefs, deficiency in effort beliefs or insufficient task values. In other words, even if a student perceived their teacher to support their needs, no significant change would occur in the aforementioned amotivation subtypes. Again, an explanation may lie in the six-week unit of work being too short, therefore not allowing enough time for change to occur. It may take time for some students to develop relationships with their teacher and subsequently students may have found it difficult to report accurate perceptions of
teacher need support in a limited time frame. Moreover, it may take longer to observe change in a students’ deficiency in ability and effort beliefs as these amotivation dimensions are focused on students’ feelings towards themselves. Such personal preconceptions may be more difficult than task-related perceptions for students to modify without enduring support and attention from the teacher. Positive feedback to enhance feelings of competence and encouragement from the teacher are a necessity. The teacher is required to know and understand their students’ individual needs in order to improve their learning in PE.

**Limitations and future research**

There are several limitations to be considered in evaluating the current findings. First, no causal inferences could be made in relation to the associations between perceived need support and amotivation. However, the findings are supported by previous empirical evidence to suggest the importance of need support for change in amotivated behaviours (Shen et al; 2010b; Vlachopolous et al; 2013). Second, this study did not measure students’ need satisfaction plus other variables that might have had an influence on amotivation, e.g. past experiences. According to SDT, social-contextual factors such as perceptions of need support should have an indirect influence on motivational regulations via the satisfaction of the three basic psychological needs (Cox & Williams, 2008; Deci & Ryan, 2000; Vallerand, 2001). Future studies should, therefore, recognise need satisfaction as an important mediator between the environment and the amotivation subtypes.

Moreover, recent research has begun to explore Deci and Ryan’s (2000) contention that psychological need thwarting will lead to ill-being and maladaptive outcomes. Not all previous literature has found low need support and low need satisfaction to relate to maladaptive outcomes, perhaps due to not explicitly assessing the ‘darker side of teaching’ (Bartholomew et al; 2011). Thus, perceptions of teacher need thwarting may be a stronger indicator of amotivated behaviours among students. Future research should investigate students’ perceptions of need thwarting by the teacher, inadequate need support, and their subsequent effects on the four amotivation dimensions.

The present findings were also based on a relatively small adolescent male sample, so are unable to be generalised to female adolescents. Evidence suggests that female adolescents are more likely to be amotivated than boys (Sallis et al; 2000; Wang et al; 2002) and, therefore, studies exploring the gender differences in amotivation in a
PE context would be welcomed and beneficial for physical educators. Furthermore, due to the present study being longitudinal, attrition was evident. The sample size decreased from 162 participants at the start of the study to 130 participants at the end. This decline can be explained by students being absent from school or the PE lesson, non-participation due to illness or injury, or not completing the questionnaire sufficiently to obtain recordable responses. It could be argued that these specific students might display amotivated behaviours towards PE and as a consequence, the present study may include a biased sample. Overcoming this predicament is challenging for researchers, as highly amotivated students are likely to be those individuals who do not participate in the PE lesson. However, although students’ mean amotivation scores were low, (suggesting self-determined motivation was present), this study identifies teachers as being a potential influence on changing students’ levels of amotivation scores over time. Teacher behaviours that have been identified in the literature to support the three basic needs are structure, interpersonal involvement and autonomy support. Findings have suggested that teacher training in how to effectively provide these three behaviours in lessons has resulted in a decrease in student amotivation (Tessier et al; 2010). Further research is needed to be able to guide teachers on how to successfully support students’ psychological needs. Likewise, more longitudinal studies are needed to observe change in amotivation over a longer period of time in the PE context controlling for confounding variables. Although PSC was not found to be a significant predictor of amotivation in the current study, future research nevertheless should identify key moderating influences.

In conclusion, current findings highlight the importance of teachers to create an environment that supports the basic psychological needs and forestalls the development of amotivation among some students. As indicated by the results, teachers who inadequately support students’ autonomy, competence and relatedness in PE may evoke feelings of boredom, and disinterest in the PE lesson. Over time, students subsequently may display avoidance behaviours such as opting for more sedentary roles in the lesson, purposely forgetting their PE kit, and poor attendance (Ntoumanis et al; 2004). It is imperative, therefore, that teachers are encouraged to seek and employ strategies to modify their behaviours and create need supportive environments. Future studies would do well to examine predictors of change in amotivation over a longer time period and across a number of different activities involving boys and girls. Larger scale investigations could also yield data revealing the class-level, as well as individual-level
influences on amotivation among adolescents. As a result a more comprehensive understanding of motivational processes in PE will be achieved.

References


Wang, C. K. J; Chatzisarantis, N. L. D; Spray, C. M; & Biddle, S. J. H. (2002). Achievement goal profiles in school physical education: Differences in self-

Chapter V

Study 3a

Understanding amotivation in physical education across the transition from primary to secondary school
**Introduction to Chapter V**

The following chapter details a qualitative study, which builds upon the quantitative studies presented in Chapters III and IV. Study 1 highlighted deficient ability beliefs to negatively predict PSC and Study 2 highlighted the importance of the teacher in forestalling the development of amotivated behaviours in PE. Due to lack of empirical evidence to support our findings, it was decided that in order to further enrich our understanding of amotivation qualitative research was required to provide more substantial evidence. In addition, in the present study a decision was made to target students who were in their final year of primary school in order to understand potential reasons for the early onset of amotivation. This chapter focused on exploring amotivated students’ experiences of PE in primary school and students’ expectations of PE in secondary school. By understanding amotivation in PE in the early years of secondary school, interventions can be put in place by teachers to forestall amotivation as a student progresses through the school.
Abstract
The aim of this study was to enhance our understanding of amotivation by exploring amotivated students’ experiences of PE in primary school and their expectations of PE in secondary school. It is important that researchers and teachers identify amotivated students as soon as possible so interventions can be put in place. This may be particularly important across the transition from primary to secondary school whereby teachers need to communicate individual students’ progress and attainment grades, as well as their motivation and effort behaviours so teachers can intervene accordingly. Students (N = 3) from a primary school in south-east England were interviewed as a group with questions pertaining to their thoughts and feelings towards PE. The four amotivation dimensions were explored along with students’ perceptions of teacher’s need support and PSC. Using thematic analysis, the results that derived from student’s experiences of PE in primary school revealed 19 lower order themes, which were reduced to 9 higher order themes (deficient ability beliefs, deficient effort beliefs, insufficient task values, unappealing task characteristics, perceived autonomy support, perceived relatedness support, perceived competence support, ego-oriented climate and intra-class ability) and 4 general dimensions. Students’ expectations of PE in secondary school encompassed 12 lower order themes, which were collapsed into 6 higher order themes (task difficulty, fatigue, peer relatedness support, intra-class ability, intra-class conflict and perceptions of relatedness support) and 4 general dimensions. Overall the findings support the existence of the four amotivation dimensions and shed light on additional socio-contextual variables that may determine the causes of amotivated behaviour in the PE context.

Keywords: Amotivation, physical education, perceived need support, transition
**Introduction**

Existing literature on amotivation in PE has focused on secondary school students, particularly age 14-16 years (Study 1; Study 2; Ntoumanis et al; 2004; Shen et al; 2010a, 2010b) as research suggests motivation and physical activity declines during adolescence. Longitudinal studies have identified that physical activity levels decrease dramatically during adolescence particularly in girls after the age of 8-10 (Aaron, Storti, Robertson, Kriska, & LaPorte, 2002). Therefore, this period of time between the final years of primary school and early years of secondary school are crucial to examine changes in psychosocial factors, which may or may not influence physical activity levels in the future. Katene (2000, pp.188) stated “the transition from primary to secondary is probably one of the greatest sources of discontinuity in the education of pupils”. For example, pupils experience a number of changes, such as being the oldest in the school in year 6 to being the youngest in year 7, being taught by specialist teachers in all subjects, and in PE, being taught for the most part with full size equipment. Murdoch (1990, pp.73) states that “the call is for the secondary school physical education specialist to embrace the complete 5-18 age range” and to “contribute, in conjunction with primary school teachers, the continuity and progression that are so essential”. Although initiatives are now in place in UK schools to help the transition to be smoother and reduce students’ anxieties and fears, there is limited research that has explored the thoughts and feelings students have regarding physical education (PE) prior to the transition, and specifically among amotivated students.

Amotivation is the absence of motivation and is evident among boys and girls from Year 7 to Year 11 (Study 1). It is of huge concern that students who have been identified as amotivated in PE in Year 6 may continue to be amotivated in secondary school, due perhaps to their low ability and effort beliefs, not valuing the subject and finding the activities boring (Shen et al; 2010a), all of which may be based on their negative preconceptions and experiences in their primary years. It is therefore the aim of the present study to investigate amotivated students’ experiences of PE in primary school, as well as their expectations and feelings towards PE in secondary school in order to understand why children are being ‘turned off’ PE at such an early stage in their development.

Captivatingly, inadequate need support from teachers has been associated with amotivation (Shen et al; 2010b; Study 2). Shen and colleagues (2010b) found teachers’ competence support to be directly negatively correlated with all four amotivation
dimensions and teachers’ relatedness support to be negatively correlated with insufficient task values and unappealing task characteristics. In Study 2 we found at the start of the study, perceived autonomy, competence and relatedness support negatively predicted unappealing task characteristics and insufficient task values and over time all three types of perceived need support negatively predicted change in unappealing task characteristics. Teachers therefore may affect student motivation by failing to support students’ needs for autonomy, competence and relatedness. Teachers however, are not the only viable sources of psychological need support in the physical education setting. Research has shown that peers are extremely influential in supporting students’ needs, in particular feelings of relatedness, and as a consequence help enhance an individuals’ self-determination (Cox, Duncheon, & McDavid, 2009; Cox & Williams, 2008). Evidence has also demonstrated that peer relationships can contribute to the quality of physical activity (Smith, 2003) and successful friendship groups can enhance children’s perceptions of competence (Weiss & Duncan, 1992). Peer motivational climate therefore was an additional theoretical construct that was deemed important to investigate in this study.

The term motivational climate refers to individuals’ perceptions of motivational cues and expectations in the environment that help encourage a particular goal orientation and produce a goal-involved state (Ames, 1992). Based on achievement goal theory (Nicholls, 1989), individuals evaluate their competence in achievement settings in two different ways to produce two different goal orientations, namely task orientation and ego orientation. Task orientation is evident when an individual evaluates their competence by self-referencing and focusing on how to personally improve their skills to increase their performance. Ego orientation on the other hand is evident when an individual evaluates their competence by comparing their ability to others (normatively referencing) and may try and outperform others to make such a comparison. Thus, the motivational climate may consist of either a mastery (task) climate, focusing on improving skill and encouraging effort, or performance (ego) climate fostering social comparison. Research has shown a mastery climate to be associated with high perceptions of competence and success (Sarrazin, Guillet, & Cury, 2001) and an ego climate to be associated with maladaptive behaviours and beliefs (e.g. reduced effort and anxiety) (Ames & Archer, 1988). Hence, teachers have the pivotal responsibility in creating a mastery motivational climate and encouraging task goal orientations to increase student competence and self-determination. However, peers may also change
the dynamics of the motivational climate by inducing ego-oriented behaviours. For example, ego-oriented students may continuously look to outperform others on a task and view skill practices as competition with their peers. In competitive game play, these individuals may try and dominate the game to enhance their perceived competence. In adolescence, peer comparison is one of the central sources of competence information compared to feedback from teachers in the younger years (Weigand, Carr, Petherick, & Taylor, 2001). In a study by Vazou, Ntoumanis and Duda (2005), peer motivational climate in youth sport was investigated through a series of interviews to identify factors that underpin the motivational climate created by peers. They identified eleven dimensions of peer climate: cooperation, effort, improvement, mistakes, intra-team competition, intra-team conflict, equal treatment, normative ability, autonomy support, evaluation of competence and relatedness support. Based on these findings, peer motivational climate formulated one of the ‘a priori’ themes of the current study as we considered peer influence to be an important issue relating to amotivated behaviours in the PE context.

**Primary-secondary school transition**

The transition from primary to secondary school is one of the key changes in a child’s life (Zeedyk et al, 2003), and maintaining motivation through the transition period is crucial to a child’s success. Zeedyk and colleagues (2003) undertook a survey in the UK seeking the views of primary pupils, secondary pupils, parents and teachers in regard to the transition process. They found that bullying, fears of getting lost, increased workload and peer relationships were all of major concern. Collins (2000) found that stress and worry when first starting secondary school could lead to decreases in academic performance. Additionally, Wigfield and Guthrie (1997) identified that intrinsic motivation declines over the primary school years and such changes may lead to decreased school engagement. Although the research into the transition specifically in PE has been limited, the majority of studies outside of PE conclude a steady decline in academic engagement (Eccles, Wigfield, & Schiefele, 1998; Wigfield, 1994; Zeedyk et al, 2003). Research by Wigfield and Eccles (2000) have utilised the expectancy-value model of achievement motivation to examine how influential the transition from primary to secondary school is on achievement motivation. They highlighted that school evaluation, competition and social comparison decrease children’s beliefs that they are academically competent. Subsequently, a child will develop strategies to avoid appearing like they lack ability, such as avoiding challenging tasks, making excuses and
displaying low effort, all of which threaten their ability self-concepts. Such evaluations may become more prominent when a child reaches secondary school and may be going through key developmental changes both physically and psychologically (Eccles & Midgley, 1989; Wigfield, Eccles, & Pintrich, 1996). Moreover, an increased emphasis on competition, for example trialing for sports teams, can make the PE experience seem even more daunting and may open the door to even more opportunities to fail.

In past research into school contexts, researchers have explored how students’ beliefs about their ability and competence change during their years at school (Eccles, Midgely, & Alder, 1984; Harter, Whitesell, & Kowalski, 1992). In the transition from primary to secondary, children are experiencing changes in social relationships and environment, as well as higher-level learning and developmental change. The young adolescents are facing new friendships, new student-teacher relationships, and therefore the impact of the transition on the ‘self-system’ has been a focal point for many researchers (Seidman, Aber, Allen, & French, 1996). The ‘self-system’ consists of affective, cognitive, behavioural and motivational domains, and the transition may be critical in keeping these domains balanced to prevent negative psychological implications. It is therefore imperative that we identify students who are amotivated in primary school so teachers can intervene early to avoid physical activity declining further.

The purpose of the present study was to provide an in-depth account of amotivation in PE within the final years of primary school and to gain a more enriched understanding of amotivated students’ thoughts and feelings towards PE before the transition into secondary school. Questions were asked during interviews on the participants' hopes and expectations of PE in secondary school. The researcher also explored variables that may predict amotivated behaviour, for example, perceived teacher need support, physical self-concept and peer motivational climate. Therefore, the first aim of this study was to provide a theory driven account of amotivation in PE by exploring the multidimensionality of amotivation and the possible determinants of amotivation perceived by students in their primary school. Based on the evidence, it was hypothesised that students’ experiences of amotivation would support the four-factor model consisting of deficient ability beliefs, deficient effort beliefs, insufficient task value and unappealing task characteristics. Perceptions of teacher and peer need support and the dimensions of peer motivational climate were additional facets that were hypothesised to be pertinent in our understanding of amotivation across the
transition. It must be noted however that whilst we hypothesised existing themes to emerge based on theoretical and empirical work on amotivation, this study aimed to explore and identify new dimensions. Therefore new themes emerged in the results that were not hypothesised.

Method

Participants

Participants were recruited from a mixed comprehensive primary school in the South East of England. The head teacher of the primary school (a PE specialist) alongside his colleagues identified three amotivated pupils in year 6 (2 male, 1 female, mean age = 10 years) based on a set of criteria established by the researcher, listing typical amotivated behaviours in a PE setting (Ntoumanis et al; 2004). All of the students were in Year 6 and were in their final term of primary school before the transition to secondary school. Participants took part in two hours of physical education classes per week, plus optional extra-curricular activities after school. The students were in the same PE class and were taught by the same PE teacher for a number of different activities throughout the year.

Procedure

A qualitative approach was used to explore the experiences of amotivated students in primary school together with their expectations of PE in the first year of starting secondary school. Ethical approval for the research procedures was obtained from the relevant institution. A primary school was then approached in the South-East of England and permission was sought from the head teacher and the Head of PE to carry out research in their establishment. The Head of PE was first asked to identify a group of students in Year 6 who they perceived as displaying amotivated behaviour toward PE in lessons. Sets of criteria were given to help establish typical amotivated behaviours observed in PE based on past research (Ntoumanis et al; 2004). Three students were identified and parental consent was then obtained through distribution of letters prior to data collection. The selected students were then invited to collectively attend a semi-structured interview during a curriculum PE lesson, which took place in the school setting in a communal area. Following a brief introduction of what the research was about, informed assent was given from all the participants by completing a ‘willingness to participate’ form. If a student did not have parental consent or give their informed assent then they would have been withdrawn from the study.
Measures

The Amotivation Inventory in Physical Education (AI-PE) (Shen et al; 2010a) was administered to participants at the start of the interview to assess students’ amotivation in PE. The AI-PE consists of 16 items measuring the four dimensions of amotivation. Deficient ability beliefs (e.g. ‘I don’t have what it takes to do well in PE’); deficient effort beliefs (e.g. ‘I’m not energetic enough’); unappealing characteristics of the task (e.g. ‘My PE lessons are not stimulating’); and insufficient task values (e.g. ‘PE is not valuable to me’). Students were first instructed to state on a Likert-scale (1 = Never to 7 = Always) ‘how often do you feel a lack of motivation to do PE’. They were then asked to rate on a Likert-scale from 1-7 (1 = does not correspond at all to 7 = corresponds exactly) each statement that corresponded with their reasons for not wanting to do PE.

Interview

Students were interviewed as a group for approximately 40 minutes. It was felt that one to one interviews at a young age may be too intimidating for the student and subsequently their responses may be limited. Although students were asked questions directly, collaborative discussions often took place in the group, which offered new insights and perspectives that may not have occurred in a one to one setting. At the start of the interview, students were informed that they were going to be asked questions on their experiences of PE in primary school and their expectations of PE in secondary school. Students were first asked to describe their weekly physical activity, including PE lessons to ‘break the ice’ and so the researcher could gauge how active the ‘amotivated’ students were on a weekly basis. Subsequent questions served to stimulate dialogue and group discussions around contexts such as feelings towards PE in primary school, perceived ability, perceived effort, importance of PE, attitudes towards activities and perceptions of the teacher. It was emphasised to the students that there were no right or wrong answers and to try to answer as honestly as possible. They were informed that their responses would remain anonymous, they did not have to answer any question they did not feel comfortable with and they were briefed on their right to withdraw at any time. The interview was structured to allow for open-ended responses and follow up questions were used to explore initial responses further. For example, “Can you explain the point you just made” and “Is there anything else you would like to add”. All participants were aware that the interview was being tape recorded to ensure accuracy. Each participant was given a letter A, B, or C, which they
were then told to say out loud before they responded to the question. This enabled each student to be identified anonymously on the tape recording.

**Data analysis**

The average score was calculated for each participant on the AI-PE. Data from the interview were audio recorded and transcribed verbatim. Template analysis was used to analyse the interviews as a type of thematic analysis (King, 2004). Template analysis has emerged from more structured approaches such as Grounded theory (Glaser & Strauss, 1967) and Interpretive Phenomological Analysis (IPA: Smith & Osborn, 2003). Template analysis maintains the use of coding data but is not as prescriptive as the other approaches (King, 2004). The use of ‘a priori’ codes from the literature is a key feature of this analysis and helps form the initial template in which sub codes are defined. Starting with predetermined codes helps guide the analysis. After continued exploration of the data, more codes can be developed and refined from the interview questions to produce a final template of themes and sub-themes. Template analysis allows for descriptive and interpretive coding and does not attempt to differentiate between the two (King, 2004). The final template was discussed with another researcher to reflect on the interviewees’ responses and to discuss the interpretations of the findings.

**Results and Discussion**

The findings from the interviews are presented in two sections: amotivated students’ experiences of PE in primary school (Table 5.1) and amotivated students’ expectations of PE in secondary school (Table 5.2). Some of the general dimensions and higher order themes were taken from existing theories and research on self-determination, amotivation and peer motivational climate, reviewed in the introduction.

**Experiences of PE in primary school**

The four amotivation dimensions, students’ perceptions of teacher need support, performance climate and peer motivational climate were established as the main ‘a priori’ themes (general dimensions), and were supported by the analysis. The lower order themes that contributed to the higher order themes are described below and in Table 5.1 and provide a more in-depth account of how these sub themes impact students’ experiences of PE in primary school.

**Amotivation**

The students were identified as being amotivated at the start of the study, which was partially supported by their responses on the AI-PE, with two out of the three
students scoring above the midpoint. Amotivation therefore emerged as a general dimension and the higher order themes that emerged from the interview data comprised of the four amotivation dimensions: deficient ability beliefs, deficient effort beliefs, insufficient task values and unappealing task characteristics. In other words, students perceived themselves to lack ability in specific activities, found sustained effort a challenge, lacked understanding and meaning of PE and voiced their disinterest in some of the activities they participated in during primary school.

**Deficient ability beliefs**

The lower order themes derived from this dimension were: a) comparing ability to their peers; b) personal evaluation of their ability and c) not believing they can accomplish the task. Students were aware of their ability compared to their peers and understood and recognised their performance level as a consequence. During a discussion about students’ perceptions of ability in PE, Student A commented on his ability by saying: “I know I’m not awful but I know I’m not the best definitely”, highlighting students’ awareness of their own ability compared to others. Nicholls (1984) believed perceptions of competence of ability was a key feature of achievement behaviour. Nicholls believed that children under the age of nine years have a less differentiated conception of ability, meaning the level of ability is dependent on the amount of effort exerted. As a child develops and reaches age eleven they have a more differentiated conception of ability and start to compare their performance with others i.e. normative ability. Student C for example said: “Cross-country, I’m usually at the back”, demonstrating that some students are marking their success by judging their performance outcome to others in the class. In the present study, students were age ten (Year 6) and were beginning to realise that the amount of effort they put into improving a skill may not be enough to be successful if they do not have the ability in the first place. Importantly, the results of the current study highlight that before students enter secondary school they are already starting to judge their performance against their peers. Collaboratively, Xiang, Lee and Williamson (2001) in a study on students in grades 4, 8 and 11, found students in these grades assessed their ability in social comparative terms.

Student A continued to discuss his ability and remarked: “yeah, I’m not very good at it….”. The student clearly upholds a pessimistic view of his ability and implies that ability is stable and cannot be changed. Dweck (1986) proposed that individuals hold two conceptions of ability; entity and incremental conceptions. An entity view is
the belief that personal ability is fixed and there is a limit to which an individual can execute what is learnt to increase their performance. An incremental conception asserts that ability is malleable and an increase in effort may increase one’s ability. Dweck believed that by age ten/eleven, children should understand both views but only focus on one when thinking about personal ability. It may be that students who are deficient in their ability beliefs and hold an entity view are vulnerable to ‘giving up’ in PE and dropping out of extra sporting activities, both of which are behaviours evident of an amotivated student in PE (Ntoumanis et al; 2004).

Furthermore, the results showed that amotivated students might uphold pessimistic beliefs that they can accomplish a task. Student C acknowledged her doubt over her ability to complete the cross-country course by saying:

I know how to do it and then I feel a bit scared but when I do it I just know, I don’t know…that I can do it though… I just feel embarrassed.

Not only is student C acknowledging her lack of confidence in her ability, but also inferring a relationship between deficient ability beliefs and affective variables. Affect is the feeling or emotion that an individual experiences, and in the above quotation Student C has referred to feeling “scared” and “embarrassed” which can be categorised as negative emotions. Based on previous research showing an association between amotivation and negative affect in PE (Mouratidis et al; 2008; Ntoumanis, 2001) future studies would do well to explore the relationship between the amotivation dimensions and emotions amongst students in PE.

Student B additionally expressed how he found PE in general challenging, stating: “I find it hard sometimes”, thus the difficulty of the task may have an important effect on students’ ability beliefs. Research has shown students’ perceptions of ability to be negatively related to perceptions of task difficulty. In other words, if students perceive the task as difficult, they are likely to feel less competent and their performance will decrease (Weidong, Lee, & Solmon, 2007). The expectancy-value model of motivation (Eccles et al, 1983) has been extensively used to explore student motivation in the academic and sport setting and defines expectancies as ‘the subjective probability a person can succeed on a task if a particular action is carried out’ (Meece, Wigfield, & Eccles, 1990). Therefore, ability beliefs can be task specific. Students may have deficient ability beliefs in cross-country due to not feeling they are competent to perform the task, but may have high self-perceptions of ability in another activity.
Deficient effort beliefs

The lower order themes included in this dimension were: a) avoiding exerting effort, b) the effect of the type of activity on effort exertion and c) the effect of the length of activity on effort exertion. The first lower order theme referred to students wanting to avoid strenuous activities. Students expressed how they wanted to try and avoid some activities in PE, in particular cross-country. An example of a quote that exemplifies the avoidance of exerting effort is the following: “I would want to be sick that day”. The current literature has described such avoidance behaviours as self-handicapping, meaning students will often claim they are ill, provide excuses when given a challenging task and/or reduce effort to mask their incompetence on a task (Chen, Wu, Kee, Lin, & Shui, 2009). It is thought self-handicapping may be used initially to protect students’ self-worth and protect them from being ridiculed in public (Chen et al, 2008), but research has shown over time self-handicapping can lead to lower intrinsic motivation and lower competence satisfaction (Zuckerman & Tsai, 2005).

The type of activity also plays a part on effort exertion. Students had experienced cross-country running in primary school as a class event and disliked the feelings of exhaustion that they associated with this activity. Student B stated: “It’s just really tiring and you like always come near the back”. In addition, students were honest in their answers regarding effort and admitted to not trying when the activity was unappealing. Student C said: “I try a bit hard but well when its running I quite, can’t be bothered to try I just run”. Lastly, the length of the activity concerned some students. Student B acknowledged a preference to run shorter distances. This may be due to the activity being over quickly and therefore not having to exert as much effort to complete the task. The fear and anxiety of being tired from PE activities and consequently not being able to complete a task was a common response when asked the question “How hard do you try in your PE lessons?”. Students in the present study may not believe they have the necessary fitness to complete the cross-country course and therefore do not believe they can sustain the effort required of them to succeed. As a result, students may ‘drop out’ of the cross-country course due to ‘injury’ or ‘illness’ to avoid failure and embarrassment of coming last. Recent research has shown fear of failure to positively predict self-handicapping (Ntoumanis, Taylor, & Standage; 2010). Urdan and Midgley (2001) suggest self-handicapping allows students to attribute failure in a specific activity to external factors to avoid internal ability attributions of failure.
Moreover, if a student has a high fear of failure, they may put in less effort to protect their self-worth (Ommundsen, 2001).

**Insufficient task values**

The higher order theme *insufficient task values* was broken down into two lower order themes: a) lack of knowledge and understanding on the importance of PE and b) insufficient explanation for participating in an activity. It was clear from the students’ responses that they did not clearly understand the importance of PE. They were aware that it was essential to keep one fit and healthy but they were unsure why and how.

Student A responded by saying:

> I think it is important, I’m not really sure why but I know it is definitely important to keep you healthy and maybe if you have a job when you are older, if you didn’t do PE in school, you might not become an athlete or something, or you could just work in an office.

Student A went on to say: “not really, we just do it. Like since the first year we would just be told to get changed and we are going outside”. The latter statement highlights a need for teachers to teach students about the benefits of doing PE in schools and the physiological reasons for doing sport and regular exercise. Students need to understand the short and long term effects of exercise. The teacher is responsible for explaining to students the physiological effects exercise may have on students’ bodies (e.g. sweating, increase breathing rate, increase in body temperature, redness in the face and muscle fatigue). For some primary school students the latter physiological responses may never have been experienced prior to a PE lesson. Sudden changes in breathing rate for example may be worrying for some students and cause the student to cease the activity. If students are educated on the normality of short term effects of exercise from a young age, and given reassurance and encouragement from the teacher, students may feel more confident to exert more effort in the lesson. The second lower order theme demonstrated that the PE teacher was not providing a sufficient explanation for why students were participating in a specific activity. Students were told to get changed and go outside without an explanation on what activity they are doing and why. Students therefore are unable to understand the advantages in doing the activity and no opportunity to internalise the behaviour is provided.

Research has identified a student’s perceived value in a specific activity is directly associated with motivated behaviours such as effort and achievement (Jacobs & Eccles, 2000). Wigfield and Eccles (1992) identified the expectancy-value construct,
meaning students’ expectancies for success (students’ beliefs on how successful they will be on a task) and perceived task values (students’ perceptions of the attractiveness of the task) will motivate them to learn different tasks. Eccles and Wigfield (2002) identified three common values in various educational domains to determine a learners’ motivation: 1) attainment value refers to whether a student perceives success on the task as being important, 2) intrinsic value refers to the amount of enjoyment a student gains from the activity, and 3) utility value is the students’ perception of how worthwhile the task is for achieving current and future goals. Students’ perceptions of task values determine a students’ motivation to learn (Eccles & Wigfield, 1995) and more importantly have a strong influence on a students’ motivation to continue participating in the activity in the future (Xiang, McBride, & Guan, 2004). The aforementioned results of the current study have identified the amotivated students to have insufficient task values, partly due perhaps to not having acquired attainment, intrinsic and utility value from the activity. Alarmingly, longitudinal studies have shown a decline in students’ motivation to learn, in part resulting from a decrease in students’ perceived task values in sports and physical education from primary to secondary school (Jacobs, Lanza, Oswood, Eccles, & Wigfield, 2002; Xiang, McBride, Guan, & Solmon, 2003). It is therefore imperative that teachers provide students with knowledge of the importance of PE activities to an individual’s health and well-being. By doing so, students will have the necessary information to be able to evaluate what activities they deem as being important in order to make motivational decisions (i.e. how much effort they are going to exert).

**Unappealing task characteristics**

The type of activity that the students do in PE was recognised by the students as being extremely influential in their motivated behaviours. The lower order themes from this dimension that emerged were: a) specific activities are boring, b) repetitive tasks and c) task difficulty. Running was continually noted as being an activity they found boring and repetitive. For example, Student C explains, “I like the other sports but I don’t really like running…running around like loads of times”. Student A admitted to enjoying other activities such as dodge ball and went on to explain that he worked harder and was prepared to be tired in this activity because it was fun. It can be argued that individual activities like running may highlight students’ weaknesses due to the emphasis of normative ability and competition with their peers. There is not an opportunity for social loafing to take place in individual sports. Running events for
example, put students on centre stage where they are being watched and judged by others on their performance. Competing in this way against your peers can create feelings of anxiety, reduced effort and maladaptive beliefs (Ames & Archer, 1988).

Achievement goal theory (AGT: Nicholls, 1984, 1989) can aid our understanding as to why certain activities may decrease student motivation. This theory proposes the existence of two major goal states in achievement settings; a task-involved goal perspective or mastery oriented (Ames & Archer, 1988) and an ego-involved goal perspective or performance oriented. (Dweck & Leggett, 1988) Individuals who are task-oriented have been associated with adapted motivational patterns of behaviour, for example, persisting on difficult tasks and seeking new challenges. On the contrary, individuals who are ego-oriented adopt maladaptive behaviours such as an unwillingness to exert effort, especially during difficult tasks, and have a tendency to avoid a challenge.

Although research has identified individuals to have a disposition towards a particular goal perspective (Nicholls, 1989), the motivational climate created by the teacher may enhance or constrain individual goals. In the present study, one could argue that teachers, whom establish a performance motivational climate, provide opportunities for individuals to adopt performance goals and focus on the anticipated outcomes such as rewards and social approval. Running events in school, whereby students are competing against their peers, is a highly ego-oriented climate which has been associated with students’ use of self-handicapping (Midgley & Urdan, 2001), boredom and less autonomous forms of motivation (Barkoukis & Hagger, 2013). It would appear that the students in the current study were ego-oriented as the difficulty of the task was a factor that students highlighted as being a negative experience in PE. When students discussed their dislike for cross-country (task specific), student B said, “but sometimes it is a bit too long” followed by Student A saying, “think we run…how far? We run a massive field, it’s like twice the size of ours”. The students have not only highlighted their dislike of the task, but have also implied they are concerned with the distance in which they run, subsequently displaying their preconceived view of the course as being extremely challenging. Therefore, the difficulty of the task was an important feature when determining whether the task was appealing and subsequently enjoyable.
Perceptions of teachers’ need support

Research has shown the critical importance for teachers in the PE context to support students’ basic psychological needs for autonomy, competence and relatedness in order to enhance motivation (Deci & Ryan, 2000). Students’ perceptions of teacher psychological need support was therefore identified as the general dimension and students’ perceptions of autonomy, competence and relatedness as the higher order themes. The present findings showed that feelings of volition, positive feedback and empathic teachers were all important to students.

Perceived autonomy support

The lower order theme that emerged from this dimension was: a) lack of control and choice over actions. It was transparent from students’ responses that being “forced” and “made” to do a task in PE created negativity towards the activity. For example student B stated:

um…um…I don’t like being forced into having to run like six laps of the track…yeah. You should get to choose how much you want to do.

The word “forced” insinuates that the student has no choice in how far he/she runs and may evoke anxiety amongst some students. For example student A commented:

I remember one sports day um…to find out who would do what um…they made us all do the 600m and a lot of people dropped out and they got quite upset.

The above experience the student is describing may “turn off” some students from PE from a young age. The emotions that were felt during and after the above event may subsequently be associated with running events in the future and therefore cause anxiety for the student prior to the PE lesson if they knew the activity was running. Once again, students may avoid the lesson rather than face their fears. Furthermore, student A describes in the above quotation that the teacher was making students run 600m to help select students for the event on sports day. The teacher has therefore created an ego-involving climate emphasising competition and performance as being important.

Students’ intentional behaviour to act a certain way can be regulated in an autonomous or controlled way by the teacher. When teachers support a students’ autonomy, students feel they are in control of their own behaviour and have a sense of choice over their actions (Reeve & Jang, 2006). It has been said that students experience high volition, meaning psychologically they feel free rather than pressured during an activity. Teachers can nurture such volitional intentions by supporting the
need for autonomy. For example, in the present study PE teachers can ask students to give feedback on the types of activities that are offered in the curriculum and their thoughts and ideas as to what activities they would prefer to do the following year. By doing this, the students feel a sense of ownership over their learning and the teacher is identifying the student’s psychological needs in their planning. Additionally, rather than “forcing” students to run 600m, teachers could set this activity up as an individual event, paired activity or a team challenge. By differentiating activities, the more able students have the option to solely run 600m and the less able can either run the distance with a friend or split the total distance across the group so each member can decide how far they want to run. The latter ideas may prevent feelings of anxiety among students.

The results suggest that teachers in the present study are using controlling behaviours that are teacher-centered. The teachers are using extrinsic incentives such as being selected to run on sports day and may be using pressuring language to communicate.

Shen and colleagues (2010b) have shown that a lack of autonomy support in physical education is associated with the amotivation dimensions. They conducted a study on 566 students in the 9th grade and measured students’ amotivation and their perceptions of teachers’ social support, assessing autonomy, competence and relatedness. Correlational analyses revealed that teachers’ autonomy support was negatively correlated with insufficient task values and unappealing characteristics of the task. Although this study was conducted in the USA, and findings can not therefore be generalised to UK secondary schools, it is the only study to date that has explored an association between students’ perceptions of need support and the amotivation dimensions. Nevertheless, there is ample evidence demonstrating a positive association between an autonomy supportive environment and high self-determination in the PE context (Standage et al, 2005).

**Perceived relatedness support**

The relationship between the students and their teachers was a minimal discussion point in the interview. The lower order theme consisted of: a) important teachers show empathy. Student A made a point of saying, “Mrs X is an expert but she is really kind” and “kinder teachers, I like them”, suggesting teachers who empathise with students and create an environment whereby students feel the teacher understands their anxieties and/or level of ability is important. Student B also said: “she (Mrs X) lets everybody have a chance”, thus supporting the need for teachers to recognise individual students’ ability and allow all students to succeed within their capabilities. Those
students that perhaps feel ignored by their teachers may feel less important and may start to suspect their ability and question the reason as to why they should continue to participate in PE (Shen et al, 2010b).

**Perceived competence support**

Discussions about being “judged” by teachers on performance were a concern. The lower order themes that developed from perceptions of teachers’ competence support were: a) important teachers provide positive feedback and encouragement, and b) promoting competition and feeling judged on ability. Perceived competence can be defined as an individuals’ belief that she/he can succeed on a task (Harter, 1999). Teachers are a useful source of information that students can use to evaluate their ability. The feedback that teachers give therefore, can positively or negatively effect students’ perceptions of competence. Student C stated, “I like it when they call your name out when I run at the end” and student A followed on by saying, “yeah they encourage you”. Some research studies have found perceived competence support to be the most important predictor of self-determination compared to perceptions of autonomy and relatedness support (Ntoumanis et al; 2001 and Standage et al; 2006). Shen and colleagues found inadequate competence support from the teacher was inversely correlated and was the strongest predictor of all four subtypes of amotivation. Furthermore, Deci and Ryan (1985) predicted that social factors (e.g. teachers and peers) that undermine perceptions of competence will promote amotivated forms of behaviour.

Performance recognition deemed to be distressing for Student A. Student A said: “Last year I did try to think no one is judging, then we get given cards saying whose 1st, 2nd, and 3rd.” By rewarding those students who came in the top three in cross-country only highlights to the other students that position is what is important to the teacher. Therefore, the students’ competence in their ability may decline as success seems unattainable. By creating a competitive environment, students are comparing their performance to others and are not self-referencing to indicate any improvements. Teachers may be able to support student’s competence by differentiating competitive environments. For example, the more able may relish the opportunity to compete and should be given the opportunity to do so against similar ability students. For the less able students, the emphasis should be on allowing students to feel successful in a less pressured climate, whereby they feel improvements have been made.
Motivational climate

Research has identified a performance or ego-oriented climate being one that promotes interpersonal competition by publicly rewarding students (Ames, 1992). A performance climate hinders the satisfaction of autonomy, competence and relatedness and therefore may decrease self-determination (Ntoumanis & Biddle, 1999).

Ego-oriented climate

In the present study, students expressed their dislike of competing against their peers. Student A said: “I just like playing, I don’t care about winning really” and “less of the just against each other all, and all…because I don’t really like that”. Student B supported student A and said: “I don’t really like doing the races, like the 200m or 600m”. An ego-oriented climate fosters social comparison and can put pressure on less able students having to compete and perform in front of their peers (Ames, 1992). Competitive environments may be more enjoyable for higher ability students as competition creates a platform for students to perform in front of their peers and the teacher. However, teachers need to differentiate in their PE lessons to make sure students of similar ability are competing to avoid being outperformed.

Peer motivational climate

Peers were influential to all students participating in the study. Using peer climate as an ‘a priori’ theme, one higher order theme (intra-class ability) developed from the data that supported one of the key dimensions of the Peer Motivation Climate in Youth Sport Questionnaire (PeerMCYSQ; Ntoumanis & Vazou, 2005). The other dimensions on the PeerMCYSQ were not identified in the data as significantly affecting students’ experiences in PE.

Intra-class ability

As described earlier, it was apparent from the start of the interview that the students did not enjoy some of the aspects of competition. From that point onward, the general thread of the conversation from the students was their dislike of competition, and their desire for more co-operation within lessons. The lower order themes that were identified were: a) emphasis on normative ability, b) perceptions of peers thinking they are not good enough and c) feeling isolated in the game. Playing team sports during PE lessons was an opportunity for some of the ‘more able’ pupils to dominate the game and gain social status and recognition. This domineering behaviour was noted by Student A, who described how one of his friends tried to control the game on his own and as a result was bypassing his teammates:
um…one of my friends um…he tries to do it by himself but cause he thinks he is good, but sometimes he can’t, he just needs a team but he can’t except that. It was the rugby in team A, whenever he got the ball his team were going “pass it”, “pass it”. He would try to get there himself.

Student B confirmed the above statement by saying: “Yeah and they’re the people that are better at it… they don’t really… like not very good at teamwork, they just do everything themselves.” Normative ability is a defining characteristic of an ego-involving climate (Ames, 1992; Duda & Hall, 2001) and occurs when an individual fails to self-reference their competence, instead focusing on demonstrating superior ability and outperforming others. Such behaviours often result in lower perceptions of competence (Sarrazin et al; 2001) and feelings of anxiety (Ames & Archer, 1988), perhaps due to the individual consistently evaluating the adequacy of their ability level, worrying about making mistakes and the ongoing rivalry among team members (Sarrazin et al; 2001). In the present study, it was not the amotivated students demonstrating normative ability per se, as they were not trying to outperform others. However, the impact of being in an ego-involved climate has on amotivated students is interesting. If peers are “dominating” the game and “showing off” their skills to outperform others, opportunities for social loafing may occur among those students who are less able. Social loafing refers to a reduction in individual effort when working collectively with others on a task (Latené, Williams, & Harkins, 1979).

The students in the current study also commented on the profound negative effect that certain peers in the class had on their experiences in PE. Students were preoccupied with how their peers perceived their abilities and were aware of others putting them into positions on the pitch/court that were alleged to be more static positions of less importance. For example student B explained:

Sometimes like, people think your really bad at it and they just stick you in a place where you cant really do anything really…so in football, there is like somewhere where the ball hardly goes, like somewhere at the back somewhere.

Student A also clarified that in football he is never passed the ball. When he was asked to explain why, he stated, “Um…they don’t think I’m good I think”. Student C also commented on the lack of support from her classmates:

we…they never pass the ball to me…yeah same like them, they always put you at the back or somewhere so you can’t get it…cause they don’t think that you can do it and you’re rubbish at it so they don’t know…they’re just trusting themselves.
Being ignored during game play creates an unfriendly atmosphere among the players and averts social connections being made between children. Student A summarised his frustration by saying:

During netball, I’m not usually passed to but you can’t snatch the ball out of their hands, but a lot of the time when they pass I just know I won’t get it so I just run in and grab the ball and um…I have scored a few baskets but people just ignore me and don’t pass the ball.

Intra-individual competition and comparing ability to one’s classmates will affect students’ judgements about their own ability and the ability of others. Some students will perceive themselves to be less able and such a perception may be shared with other students in the class. It is imperative that teachers recognise when students are purposefully ignoring the weaker students and dominating the game. Once again, teachers are responsible for creating an environment in PE whereby every student has the opportunity to improve their skills and be successful.

Expectations of PE in secondary school

The amotivated students discussed their expectations of PE in secondary school and their responses shed light on reasons why student’s motivation may continue or start to decline across the primary-secondary transition.

Task characteristics

The type of activity has been recognised in PE research as being influential in maintaining the interest of children on a task (Chen, 1996). The higher order theme identified under the general dimension task characteristics was task difficulty.

Task difficulty

Students expressed their anxieties over the PE lessons in secondary school being increasingly more difficult than primary school. The raw data highlighted the students’ concerns about having to run further distances as they get older and the lessons being more challenging. Student A stated: “I expect in the running lessons you will have to run further” and “the lessons might get more difficult”. Student B supported the latter response by saying, “You run more, you’re bigger”. The concerning question to be asked is “Why would challenging tasks cause students to be anxious?”. The answer may be due to the phenomenon of learned helplessness (Abramson et al; 1978). Learned helplessness occurs when individuals perceive themselves to have no control over their achievement outcomes due to repeated failure in numerous achievement situations. In the present sample, the students may have repeatedly failed during
running events, hence why running longer distances has been raised as a concern. When children continue to experience failure, they believe there is nothing they can do to change the outcome and attribute failure to their lack of ability (Stipek, 1993). Such individuals may be more likely to give up easily on tasks, especially when challenged, and become frustrated with their performance. The students in this study may be experiencing learned helplessness in primary school and therefore are concerned about the increased difficulty of tasks in secondary school. If students have repeatedly failed in PE in primary school, then how will they ever be successful in secondary school when the tasks are more challenging? Thus, students need to be successful early on in secondary school to break the cycle of failure that they may have experienced previously.

Being in single-sex classes was also a concern. Male participants were apprehensive about doing different sports which may be harder, e.g., rugby. For an amotivated, less able student, why would playing rugby in an all-boys class cause anxiety? Student A explained he was anxious about playing contact tag rugby. He commented, “…I’m just worrying about my tags getting pulled off. I’m going to be piled on by people” and “they are all just going to be beating you up and take the ball off you”. The type of activity therefore may “turn off” some students from PE. Contact rugby is often taught in schools as a compulsory activity on the boys PE curriculum from Year 7 to Year 10. Teachers need to understand the negative psychological effects team sports may have on particular students who may have low ability beliefs. Anxiety, low self-esteem, depleted confidence and embarrassment are a few examples of how students may be feeling prior to a PE lesson and teachers need to create a supportive environment to help support such students.

**Perceived effort**

Students were extremely concerned about how hard they would have to work in PE in secondary school. If amotivated students have deficient effort beliefs prior to secondary school, then it makes sense that one of their anxieties regarding the transition from primary to secondary PE would be teachers’ high expectations of effort. The higher order theme that derived from the data was ‘fatigue’ which consisted of the following lower order themes: a) perceptions lessons will be more tiring, b) not wanting to put effort into an activity and c) dislike the feeling of being tired.
Fatigue

Avoiding exertion is often observed among students in PE lessons, and in the present study, students consistently discussed their perceptions of lessons in secondary school being more strenuous due to the larger facilities, subsequently requiring students to “do more”. Student B expressed the view that he would “prefer lessons to be more like primary school because the court is smaller so you don’t have to do as much”. Opting to do less in the lesson may be due to students wanting to avoid the physiological response of being tired such as sweating, increase breathing rate, increase heart rate and redness of the face, perhaps due to the embarrassment these responses may produce. Student A stated, “you get quite tired out from just running and it’s generally not very fun”. Although this statement was task specific (running), it was feeling tired that was highlighted as not being enjoyable.

Peer motivational climate

The higher order themes that developed from this general dimension were taken from the PeerMCYSQ and consisted of peer relatedness support, intra-class ability and intra-class conflict.

Peer relatedness support

This dimension encompassed four lower order themes: a) anxiety about being left out of groups, b) important to work with friends, c) help of peers to improve perceptions of competence, and d) preference to work together. Students expressed their concerns about being left out of groups if students were make the decision on selection. Student C stated: “choosing the groups, people might choose and we might be left out”. Such anxieties may be due to the students having experienced the latter situation before and therefore are aware of the feelings they endured when their peers did not choose them. For example, one may expect the higher ability students to be selected first and the lower ability students to be selected last. This process therefore invites social comparisons to take place and may lower students’ perceptions of their ability. Moreover, students that are selected last may feel disconnected with their peers and not feel part of the group or team, therefore lowering their self-esteem. Cardinal, Yan and Cardinal (2013) explored the association between negative experiences in PE and participating in physical activity later in life by asking participants to describe their negative experiences they had endured in PE. Of those students who had reported being “picked last”, they described the pain that they felt during and after this experience. They reported for example feeling embarrassed, socially isolated, having diminished
self-confidence and feeling worthless. Students having been selected last might also fear making a mistake or failing on a task so as not to disappoint the group. PE teachers today are trained to avoid creating situations whereby students select their own groups. Instead, teachers are encouraged to formulate the groups themselves. However, the aforementioned method of group selection may still be taking place if students in the present study are reporting their expectations of repeated processes taking place in secondary school. Strean (2009) stated:

We need to keep looking, both as individuals and at the structures of our learning environments, as we seek to raise the ethical standards of our profession and seek to reduce or eliminate the heartrending experiences some have had (p. 217).

**Intra-class ability**

One of the expectations students had of PE in secondary school was the increased size of the sport facilities. Students were concerned with having to participate in sporting activities (e.g. football) in such a large space, as they perceived there would be less chance of being passed the ball. Therefore the lower order theme that comprises the higher order theme intra-class ability is: normative ability. Student B stated: “if the court smaller you get the ball more…but if it is really big you hardly going to get a ball because they will have to come all the way over to you”. Student B is referring to the more able peers dominating the game. A large area would mean there would be more chance the higher ability students would control the space and ignore their presence on the pitch. It may be important therefore for teachers to differentiate by ability during competitive games. This may provide lower ability students the opportunity to get more involved and to increase their confidence.

**Intra-class conflict**

The intra-class conflict dimension can be defined as negative and unsupportive behaviours displayed by students. For example, students may blame their teammates for poor performance, put their teammates down and/or highlight their weaknesses. Student C exemplified this theme by commenting on her expectations of dodge ball in secondary school: “sometimes they hit you purposefully maybe”. Some students might be apprehensive about PE lessons as a result of intra-team conflict and may develop motivational difficulties. Ego-involving climates are more likely to foster negative and unsupportive behaviours due to the focus on performance and normative ability and may induce low perceptions of ability (Vasou et al, 2005).
Perceptions of teacher need support

Teachers have the opportunity in PE to support students’ basic psychological needs for autonomy, competence and relatedness. Neglecting and unsatisfying these needs can have detrimental effects on students’ self-determination (Deci & Ryan, 2000). In the present study students were discussing their expectations of PE teachers in secondary school and subsequently perceived teacher need support was identified as the general dimension and perception of relatedness support as the higher order theme.

Perceptions of relatedness support

The lower order theme that emerged from perceptions of relatedness support was: teachers may be strict. Student A said: “because they are experts they are going to be tougher”. Student A was referring to his perception of PE teachers in secondary school. Teachers were seen as being specialists of their subjects (“experts”) and therefore, students were apprehensive about how empathetic secondary school PE teachers may be. The students in the present study are low ability and therefore they may feel secondary PE teachers will have high expectations of them. If teachers fail to demonstrate willingness to provide empathy and support for students’ feelings, this may undermine children’s motivation (Standage et al, 2006).

Summary and conclusions

As predicted, the amotivation dimensions were a key feature of students’ responses towards their experiences of PE in primary school. Student’s perceptions of ability were low, with some students inferring their ability as being stable and unchanged. Furthermore, students were honest in their responses when questioned about the amount of effort they exerted in PE. They voiced their dislike of specific activities (e.g. cross-country) and discussed how they actively try and avoid the activity using excuses such as illness. Self-handicapping behaviours such as illness, injury and forgetting PE kit have been supported in the literature as being key maladaptive behaviours typical in an amotivated student (Ntoumanis et al; 2004) and have been associated with feelings of failure in PE (Ntoumanis et al; 2010). By examining self-handicapping and amotivation in PE further, a more comprehensive understanding of the reasons why students “drop out” of PE may be achieved. Hence, it is apparent from the results so far that the students in this study deem to hold deficient ability and effort beliefs. In addition, insufficient task values was the third amotivation subtype that was supported in our findings. It was clear that the students did not have sufficient knowledge and understanding of why they were doing PE and were participating
because they were being told to do so by the teacher. Lastly, unappealing task characteristics were significant towards the development of amotivation. Students consistently discussed their dislike of running events, in particular cross-country. The results suggest that the activity plays a key role in determining the negative thoughts and behaviors that the student may endure.

The findings also support the multidimensionality of amotivation. Although amotivation has been categorised into four subtypes (deficient ability beliefs; deficient effort beliefs, insufficient task values and unappealing task characteristics), all of which have been identified in the present study, one dimension may be more influential towards maladaptive behaviours than the other, and/or may evoke a ‘snowball effect’ whereby the subtype ignites the emergence of other subtypes, eventually lowering a students’ self-determination. For example, an individual who is deficient in their ability beliefs on a specific task may, as a result, find the task unappealing will not value the task and will subsequently exert less effort.

The significance of the teacher was crucial towards shaping the positive and negative experiences of PE. The students made reference to all three basic psychological needs of support (autonomy, competence and relatedness) by discussing teachers’ behaviour during lessons. For example, perceptions of autonomy support was addressed when students voiced their lack of control when making decisions and being “forced” to run certain distances, all of which made the students feel uncomfortable and anxious. Additionally, students reported their preference towards “kind teachers” who are empathetic towards their feelings, demonstrating the importance of relatedness support. Lastly, students expressed the need for competence support by discussing the importance of being encouraged during PE, but also inferred that they had experienced inadequate competence support due to feeling like they were being “judged” on their performance/ability when the teacher recognised and rewarded the more able students.

The role of peer interactions and the role that peers play in shaping the motivational climate has also been found to be influential in the current findings. The key theme experienced in PE was intra-team ability. The effects of more able peers dominating the games in highly ego-oriented environments was consistently raised by the students as having a detrimental effect on their motivated behaviours. For example, students felt isolated in games, their competence was lowered as they were not being passed to and as a consequence their efforts were reduced.
The second part of this study was exploring amotivated students’ expectations of PE in secondary school. The students in the present study were about to embark on the transition in PE across the two schools and had recently visited their prospective secondary school. They had therefore had an opportunity to explore the school, meet some of the teachers and visit the sporting facilities. The main themes that students expressed as a cause of concern were perceived increase in task difficulty, perceived increase in effort exertion, intra-class ability, intra-class conflict and peer and teacher relatedness support. Students voiced their anxieties over activities becoming more difficult due to using larger equipment, participating in larger areas due to bigger facilities and running longer distances. As a result, students would have to exert more effort, which exemplified their fears of fatigue. Feeling tired was not a physiological state the students were used to nor wanted to experience, perhaps due to the embarrassment of coming last in a race or upholding deficient effort beliefs due to their lack of competence in their ability. Peers also featured as being an important factor towards creating a positive PE experience in secondary school. Students were concerned about not being selected for teams, not being in a group with their friends and other students purposefully directing negative behaviour towards them in certain activities. Moreover, students perceived the secondary school teachers as being “stricter” due to being PE specialists and perhaps more controlling.

One identifiable limitation of this study was the small sample size. Only three students were interviewed so their responses are unable to be generalised to all amotivated primary school children. Despite this, case study research provides an enriched detailed account of students’ experiences and expectations of PE that would not have been discovered using a quantitative design. Nevertheless, the implications of the present findings highlight to teachers the importance of creating a positive learning environment in PE. This can be achieved for instance by ensuring a choice of activities, differentiating challenges, increasing students’ awareness of the value of PE and recognising the importance of peer influence and need support from peers and the teachers themselves. Teachers need to be conscious of setting up highly ego-oriented situations that may undermine students’ competence and effort beliefs. Understanding the abilities of all students is imperative so that every student has the opportunity to be successful in the lesson. A follow up step to this qualitative research would be to track the amotivated students into their first year of secondary school and conduct another interview with the students to investigate whether their expectations of PE held true. An
additional avenue for research would be to explore changes in amotivation across different activities in a students’ first year of secondary school and whether perceptions of need support and peer motivational climate are potential predictors of change.
Table 5.1: *Amotivated Students’ Experiences of PE in Primary School. Hierarchical Development of the Raw Data, Lower Order, Higher Order Themes and General Dimensions.*

<table>
<thead>
<tr>
<th>Raw Data</th>
<th>Lower Order Themes</th>
<th>Higher Order Themes</th>
<th>General Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: I know I’m not the awful but I know I’m not the best definitely.</td>
<td>Comparing ability to their peers</td>
<td>Deficient ability beliefs</td>
<td>Amotivation</td>
</tr>
<tr>
<td>A: Cross country, I’m usually at the back.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: I’m not very good at it.</td>
<td>Personal evaluation of their ability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: I find it hard sometimes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: I feel a bit scared, but when I do it I just know, I don’t know that I can do it though…I just feel embarrassed.</td>
<td>Not believing they can accomplish the task</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: I would want to be sick that day.</td>
<td>Avoiding exerting effort</td>
<td>Deficient effort beliefs</td>
<td></td>
</tr>
<tr>
<td>A: There is no point but run.</td>
<td>Type of activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: When it is running I can’t be bothered to try I just run.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: I don’t mind sprinting because that’s quite short.</td>
<td>Length of activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B:...but sometimes it is a bit too long.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: We run a massive field, it’s like twice the size of ours.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: I think it’s important but I’m not sure why.</td>
<td>Lack of knowledge and understanding of the importance of PE</td>
<td>Insufficient task values</td>
<td></td>
</tr>
<tr>
<td>B: So you don’t get ill, I don’t know.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: Beneficial for swimming and employment.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: …just be told get changed and we are going outside.</td>
<td>Insufficient explanation for participating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: Practising running 200m I find quite boring.</td>
<td>Specific activities evoke boredom</td>
<td>Unappealing task characteristics</td>
<td></td>
</tr>
<tr>
<td>B: It’s quite boring you’re just running.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: I don’t like running, running around like loads of times.</td>
<td>Repetitive tasks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Data</td>
<td>Lower Order Themes</td>
<td>Higher Order Themes</td>
<td>General Dimensions</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------</td>
<td>---------------------</td>
<td>-------------------</td>
</tr>
</tbody>
</table>
| B: I don’t like being forced into having to run 6 laps of the track.  
B: You’re not allowed to play it.  
B: You’re not allowed to play rounders, only girls allowed.  
A: Made us all do the 600m.  
B: Should get to choose how much you want to do. | Lack of choice | Perceived autonomy support | Perceptions of teacher need support |
| A: Kinder teachers, I like them  
A: Mrs X is an expert but she is really kind.  
B: She lets everybody have a chance. | Important teachers show empathy | Perceived relatedness support |
| C: I like it when they call your name out when I run at the end.  
A: Yeah they encourage you. | Important teachers provide positive feedback and encouragement | Perceived competence support |
| A: I did try to think no one is judging and then we get given cards saying whose 1st, 2nd or 3rd. | Promoting competition and feeling judged for their ability |
| A: I just like playing, I don’t care about winning really.  
B: I don’t really like doing the races, like the 200m or 600m.  
A: Less of th just against each other all, and all…because I don’t really like that. | Dislike competition | Ego-oriented climate | Motivational climate |
| A: …he tries to do it by himself but cause he thinks he is good, but sometimes he can’t.  
A: His team were going “pass it”. He would try to get there himself. | Peers striving to outperform others | Intra-class ability | Peer motivational climate |
| B: …like not very good at teamwork, they just do everything themselves. | Normative ability |
| B: People think you’re really bad at it and they just stick you in a place where you can’t really do anything.  
A: Um… they don’t think I’m good I think.  
C: They don’t think that you can do it. | Perception of peers |
| B: …somewhere where the ball hardly goes, like at the back somewhere.  
C: They never pass the ball to me.  
C: They always put you at the back, somewhere where you can’t get it. | Feeling isolated in the game |

<table>
<thead>
<tr>
<th>Raw Data</th>
<th>Lower Order Themes</th>
<th>Higher Order Themes</th>
<th>General Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: I expect in the running lessons you will have to run further. B: You run more, you’re bigger. A: The lessons might get more difficult.</td>
<td>Lessons are more challenging</td>
<td>Task difficulty</td>
<td>Task characteristics</td>
</tr>
<tr>
<td>C: In our new school there was a big, big..it’s like the cross-country um…the field. B: During PE lessons you will be split up from boys and girls, you do different sports and it’s harder.</td>
<td>Perception of different sports being harder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: …more strenuous</td>
<td>Perception lessons will be more tiring</td>
<td>Fatigue</td>
<td>Perceived effort</td>
</tr>
<tr>
<td>B: Prefer to be more like primary school because the court is smaller so you don’t have to do as much. A: …you get quite tired out from just running and it’s generally not very fun.</td>
<td>Not wanting to out effort in to an activity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: …choosing the groups, people might choose and we might be left out. C: I would choose the friends more because they help you. C: If you say to yourself your rubbish then they will like say ‘stop saying that’ and like help you. A:….more teamwork.</td>
<td>Anxiety about being left out of groups.</td>
<td>Peer relatedness support</td>
<td>Peer motivational climate</td>
</tr>
<tr>
<td>B: If the court smaller you get the ball more…but if it is really big you hardly going to get a ball because they will have to come all the way over to you.</td>
<td>Normative ability</td>
<td>Intra-class ability</td>
<td></td>
</tr>
<tr>
<td>C:….sometimes they hit you purposefully maybe. A: …because they are experts, they are going to be tougher.</td>
<td>Negative behaviour of peers</td>
<td>Intra-class conflict</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teachers may be strict</td>
<td>Perceptions of relatedness support</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Perceptions of teacher need support</td>
<td></td>
</tr>
</tbody>
</table>
Chapter VI

Study 3b

Understanding amotivation in physical education across the transition from primary to secondary school: a longitudinal perspective
Introduction to Chapter VI

The following chapter replicates the qualitative approach in Study 3a to continue to explore student’s experiences of PE in primary school and expectations of PE in secondary school. However, this study employed a longitudinal design to extend the research in Study 3a further by tracking students across the transition from primary to secondary school. The aim was to investigate whether amotivated students’ original expectations of secondary school were realistic and whether student’s experiences of PE in secondary school influenced change in amotivated behaviours. Tracking students into their first year of secondary school provides an opportunity to improve our understanding of potential facilitators of amotivated behaviours and to delve deeper and provide a more comprehensive understanding of the multidimensionality of amotivation. The study detailed within the present Chapter focuses on the four amotivation dimensions, perception of teacher need support, physical self-concept and peer motivational climate.
Abstract
The aim of the present study was to replicate Study 3a and to extend the research further by tracking PE students across the transition from primary to secondary school in order to gain more of an understanding of any changes in the amotivation dimensions that may occur. It is also extremely important for researchers to explore possible causes of change in the four amotivation dimensions in secondary school PE so that appropriate interventions can be put in place to forestall such maladaptive behaviours. Students were identified as being amotivated based on their responses to the AI-PE and teachers’ observations. This study was separated into two phases. In phase 1, female students (N= 4, Mean age = 10) from a secondary school in the East of England were interviewed at the start of their first academic year of secondary school. Students were asked questions to find out about their experiences of PE in primary school and their expectations of PE in secondary school. The results that derived from students’ experiences of PE in primary school revealed 14 lower-order themes, which were reduced to 9 higher order themes (deficient ability beliefs, deficient effort beliefs, unappealing task characteristics, low PSC, low perceived teacher relatedness support, low perceived teacher competence support, intra-class ability, intra-class conflict and perceptions of peer relatedness support) and four general dimensions. Student’s expectations of PE in secondary school encompassed 6 lower order themes and were then reduced to 5 higher order themes (different activities, peer comparison, students’ perceptions of teacher autonomy and competence support and perceptions of peer relatedness support), and four general dimensions. In phase 2, students were asked questions about their experiences so far in secondary school PE. Results identified 22 lower order themes, which were then collapsed into 13 higher order themes (deficient ability beliefs, deficient effort beliefs, unappealing task characteristics, insufficient task values, perceptions of teacher competence support, low perceived teacher competence support, perceptions of teachers’ autonomy and relatedness support, low PSC, perceptions of peer relatedness support, intra-class conflict, performance climate, task climate), and five general dimensions. Overall, the results provide huge insight into amotivated students’ experiences of PE and shed light on potential predictors of amotivation in both primary and secondary school.

Keywords: Amotivation, physical education, perception of teacher need support, transition
Introduction

Although there are ample research studies that have explored changes in psychological variables across the transition from primary to secondary school (Capel, Zwozdiak-Myers, & Lawrence, 2004; Harter et al, 1992; Zeedyk et al, 2003), few studies have used qualitative methods to explore students’ thoughts and feelings in PE across the transition (Dismore & Bailey, 2010; Knowles, Niven, & Fawkner, 2011). The literature reviewed in Study 3a provides the empirical and theoretical foundations of this study.

Method

Participants and context

Participants were recruited from a mixed junior school in central England. All students had come from the same primary school, which was part of a ‘diamond structure’ of schools on one campus. For example, students were taught in mixed classes in primary school from age 2-11 (Year 1-6), the students then transitioned into the all girls’ or all boys’ senior school from age 11-18 (Year 7-13) and returned to mixed classes in the sixth form. The participants in the current study were approached in their first week of starting senior school, as soon after the transition as possible in order to obtain their experiences of PE in primary school and their expectations of PE in secondary school before they had started their PE lessons. The Head of the PE department in the senior school was given a set of criteria listing typical amotivated behaviours in PE (Ntoumanis et al; 2004) so amotivated students could be identified. Four students in Year 7 (mean age = 11 years) were selected to take part in the study.

Before the transition from primary to secondary, the students had one hour of PE and one hour of Games per week plus the option of participating in a wide range of extra-curricular activities. PE lessons in Year 6 aimed to teach students the fundamental skills of throwing and catching during striking and fielding activities, attacking and defending through invasion games, swimming strokes and water safety, flexibility and movement through gymnastics and dance, and outdoor education. PE lessons often had between 15 and 20 students in the class. The Games lessons on the other hand focused on more traditional sports such as hockey, netball and rugby and would be more competitive in nature. Games lessons would be taught as a whole year group with approximately 50 students in the lesson, taught by four PE teachers.

In the students’ first year of secondary school the structure of PE and Games remained the same, with one hour of PE and one hour of Games per week. PE lessons
were taught as a class of twenty and focused on individual sports such as gymnastics, swimming, health-related fitness an dance. In comparison, the games lessons were taught as a whole year group (approximately 60 students). The main sports the school competed in were hockey in the autumn term, netball in the spring term and tennis and athletics in the summer term. Games lessons therefore focused on these major sports, using this time to practice skills and game play within selected teams. In addition, lunchtime activities (e.g. lacrosse, basketball, rounders) and after school team practices (hockey, netball, tennis, athletics) were scheduled for 30-40 minutes twice a week. Although the activities were optional, if students were selected for the school team they were required to attend after-school practices.

**Procedure**

The study was separated into two phases. The first phase replicated Study 3a by using a qualitative approach to explore amotivated students’ experiences of PE in primary school (Table 6.1) and their expectations of PE across the transition into secondary school (Table 6.2). The second phase tracked the same students after the transition to secondary school and aimed to understand their experiences of PE in secondary school and to identify any changes in amotivated behaviour (Table 6.3). Ethical approval was first obtained from the relevant institution before conducting any research. An independent all girls’ secondary school was then approached before the start of the academic year in central England and permission was sought from the head teacher and the head of PE. Once permission had been granted, the head of PE was given a set of criteria, which listed key behaviours that demonstrated amotivated behavior, for example, forgetting PE kit, opting to play sedentary roles and being consistently absent from lessons (Ntoumanis et al; 2004). Four students were identified as being the least motivated students in PE but did not meet all the criteria to be categorised as amotivated. It was important to conduct the first interview in the first week of the academic year, before the Year 7 students had any experience of PE in secondary school and their experiences of primary school would still be easy to recall. The students were interviewed again at the end of the spring term, thereby having experienced 12 weeks of PE in secondary school. Parental permission was obtained from all four students through distribution of letters and informed consent was obtained from the students themselves before data collection by completing a ‘willingness to participate’ form. Any student who did not have parental consent or give their informed assent would have been withdrawn from the study. The students were then invited to
attend a semi-structured interview during their lunchtime, which took place in a private conference room. Due to school regulations, the head of PE remained in the room during the interview process. All students were briefed before the interviews by the researcher and were told they were going to be asked a series of informal questions on their experiences in PE. At the start of each interview, students were given the AI-PE to complete to measure amotivation. Students were then asked to describe their weekly physical activity levels in and outside of school. The researcher asked students questions directly but encouraged group discussions to explore issues raised in more detail. All students were told to be as honest as they could be with their responses and the data would remain anonymous. Students did not have to answer any questions they did not feel comfortable answering and could withdraw from the study at any time.

**Measures**

The Amotivation Inventory in Physical Education (AI-PE) (Shen et al; 2010a) was administered to participants at the start of the interview to assess students’ amotivation in PE. The AI-PE consists of 16 items measuring the four dimensions of amotivation. Deficient ability beliefs (e.g. ‘I don’t have what it takes to do well in PE’); Deficient effort beliefs (e.g. ‘I’m not energetic enough’); Unappealing characteristics of the task (e.g. ‘My PE lessons are not stimulating’); and Insufficient task values (e.g. ‘PE is not valuable to me’). Students were first instructed to state on a Likert-scale (1 = Never to 7 = Always) ‘how often do you feel a lack of motivation to do PE’. They were then asked to rate on a Likert-scale from 1-7 (1 = does not correspond at all to 7 = corresponds exactly) each statement that corresponded with their reasons for not wanting to do PE.

**Interviews**

Students were interviewed as a group as it was thought one to one interviews might be too intimidating for students. Questions however were still directed at individuals but often an individuals’ response triggered a group discussion. Such discussions were welcomed as they provide more enriched data. At the beginning of each interview, the students were asked to describe their weekly physical activity in and outside of primary school so the researcher could gauge how amotivated the student was to do exercise in general, not just in PE. The interviews were structured to allow for open-ended responses and follow up questions were used to probe a response further. The interviews were tape-recorded throughout and students were made aware of this. A letter was given to all students e.g. A, B, C and D, which they had to repeat
on the tape recorder before they spoke to ensure anonymity. In the first interview, student B had to leave early due to school commitments and in the second interview at the end of the spring term, student C was absent.

**Data analysis**

An average score was taken from each participant’s responses on the AI-PE. The interview data was audio recorded and transcribed verbatim. The interviews were analysed using template analysis (King, 2004). This is a form of thematic analysis whereby categories are preselected by the researcher according to their particular interests. As a result a ‘codebook’ of ‘a priori’ themes is produced and forms the template in which the data can be analysed. The template in the current study was supplemented by research on the amotivation model, self-determination theory, physical self-concept and peer motivational climate. After continuous exploration of the data and ‘constant comparison’ of interpretations with the original text, a point of ‘theoretical saturation’ was achieved, whereby additional analyses no longer contributed to any additional meaningful themes (Strauss, 1987). Thereafter, the main ‘a priori’ codes (general dimensions) were organised into a hierarchical fashion with the general dimensions collapsing into sub themes labeled as higher order and lower order themes.

**Results and Discussion**

The interview data from the first phase of this study was presented in two sections: amotivated students’ experiences of PE in primary school (Table 6.1) and amotivated student’s expectations of PE in secondary school (Table 6.2). The second phase of this study tracks the same students after two terms of being in secondary school and explores their experiences of PE in secondary school and any potential predictors of change in the amotivation dimensions (Table 6.3). The findings are displayed as a hierarchical structure. First the raw data themes were grouped into lower order themes, which were then collated into higher order themes and finally classified into general dimensions. To explain the findings we consider each general dimension in turn and examine the higher order themes in detail by exploring the lower order themes. 

**Phase 1: Experiences of PE in primary school**

The four amotivation dimensions, physical self-concept, perceived need support and peer motivational climate were established as the main ‘a priori themes’ and were supported by the analysis. The lower and higher order themes that contributed to the
general dimensions are described below and provide a more enriched account of how these sub themes impact students’ experiences of PE in primary school (see Table 6.1).

**Amotivation**

At the start of the study, the teacher identified students as being amotivated. However, only two of the four students demonstrated high amotivation by scoring above the midpoint on the AI-PE. The remaining students scored below the mid-point displaying low amotivation. However, self-reporting as a method on its own may not be entirely reliable due to students misreading questions, not answering the questions honestly and rushing their responses. Subsequently, additional evidence from the teacher, observations and interviews, are necessary to fully understand students’ motivated behaviours. Therefore, all students in the study were interviewed as planned. The results showed deficient ability beliefs, deficient effort beliefs and unappealing task characteristics emerged from all students’ responses when explaining their experiences in PE. Students however did not report having insufficient task values, in fact all students were confident in their understanding on the importance of PE and physical activity and valued the subject.

**Deficient ability beliefs**

The lower order themes derived from this dimension were a) self-evaluation of ability and b) peer evaluation of ability. The results demonstrated that the students were able to distinguish between their own ability and effort as determinants of performance outcome. For example, student A stated:

…oh well, I can’t do it so there is not much point putting effort into it. So…um…so I think just believing that you can do it would make it a lot easier, but it’s a lot harder than it sounds.

The above quotation highlights the impact deficient ability beliefs can have on students’ behaviour (e.g. decreased effort exertion) and the psychological difficulties an adolescent may face in trying to change their self perceptions of ability. According to Nicholls’ developmental theory (1984), the way children perceive their own and others ability is partially determined by developmental levels. Nicholls argued that up until the age of 10 years old, children view ability as being changeable depending on the amount of effort exerted. The students in the present study are on average 10 years old and therefore are perhaps starting to understand the notion of ability being stable and an increase in effort no longer means an increase in ability. Student A continued to comment:
It's, I do enjoy it, but I still don't think I'm brilliant at it, and I don't think that I'm the right sort of person to do it if you know what I mean.

It was also noted from the results that deficiencies in ability beliefs were dependent on the type of activity and therefore may not be a stable dimension that can be generalised across all PE activities. Student D for example stated: “I really like the PE lessons but when it got to badminton I was like…no, I can't do that”, and “when it comes to tennis I try to do my best, doesn’t always work out”. It is important to note that there may be differences in the amotivation dimensions across different activities and as a result students may display different motivational profiles for different sports. This would make sense due to the huge diversity different sports offer in terms of the physical, mental and social demands.

Continuing to support Nicholls’ theory (1984), the results show that students of 10 years old are comparing their ability to other students in the class, which Nicholls terms as having a ‘differentiated conception’ of ability, meaning as children progress through the years at school, they have more awareness over their peers and understand the normative conception of ability. Ability therefore starts to be evaluated by comparing performance to others in the class. For example student D stated:

“Cause I always compare myself to the best and go, ‘oh I am never going to be as good as them’. I don’t think I believe in myself any time”.

Student D continued by saying; “I still do try really hard but then I think they still try really hard as well and I’m never going to be as good as them”. These comments by Student D are an example of social comparison in PE. Festinger’s (1954) theory of social comparison processes may help us understand these processes in relation to children. Festinger (1954) hypothesised that people have an innate desire to self-evaluate and often look to others to assist in their evaluation when objective measures of doing so are not available. In the context of PE for example, students are influenced by two frames of reference (class and individual). In other words, students will look to other students in the class to evaluate their ability and/or themselves. Moreover, Festinger’s hypothesis states that individuals are most likely to compare with others who are similar to them and will always strive to improve their own ability. Research has shown that there can be both positive and negative effects of comparing with different frames of reference at the same time (Chanal & Sarrazin, 2007). In particular, if an individual perceives themselves to be less able than others in the class, they will have a lower physical self-concept (PSC), be less engaged and more disaffected in the
Disaffection can be defined as a complete lack of engagement and persistence on a task (Skinner et al; 2009). In the present study, the students compare themselves to the more able in the class as opposed to one individual, which supports the work by Locke (2007) and Barnes et al (2013) who suggested the ‘generalised other’ (the class) had more of an impact on students than one individual. Student B for example commented:

“I try to like compare myself to the A team and ask what’s their strengths and their weaknesses and if so I can try and like beat their weaknesses but probably not their strengths, but kind of thing like that, but I don’t want to compare but I do”.

Due to research above identifying the negative consequences of social comparisons of ability in PE, it is important PE teachers understand that students who compare themselves to others in the class may hinder their progress. Furthermore, research has suggested that children will be more motivated to persist at a task if the comparison group is of a similar ability. Subsequently, children will be more interested on the task if the similar other is able to provide information which is meaningful to base their own self-evaluation (France Kartrudde, & Smith, 1985). If this is the case, one may assume that children who compare themselves to others of higher ability may be less motivated to persist on a task. This may be due to finding it increasingly difficult to evaluate their own performances with that of the higher ability students. As lack of persistence on tasks has been related to amotivation in PE (Ntoumanis et al; 2004), future research would do well to explore the relationships between social comparison of ability and amotivation among PE students.

**Deficient effort beliefs**

The higher order theme deficient effort beliefs was broken down into three lower order themes: a) self-perception of effort, b) give up easily on challenging tasks and c) dislike the feeling of exerting too much effort. Students were honest in their responses when asked the question, “how hard do you try in your PE lessons?” Student A stated, “I think I try pretty hard, but not the hardest I could”. When student A was asked to explain why she did not try her hardest, she said:

Probably um….uh…well I think trying. If you try harder then you can get better but sometimes you’re so sort of, you’re so overwhelmed of what you got to do so…x- country, you sort of think ‘oh’, you know you got to do that run for about 400m or something, you just think “mmm… I don’t really want to do it”.
Student A has described feeling ‘overwhelmed’ by the challenge of doing cross-country and perceives the task as being too difficult. This alone may have the knock-on effect of ‘turning off’ students and trigger negative behaviours such as ‘dropping out’ or ‘giving up’ on a task. The difficulty of the task has been explored by Nicholls (1978, 1980) who suggested that with age students perceive tasks to be more difficult if they require more effort and if fewer people can accomplish them. In addition, the level of rigor is important if the task is unattainable and above the skill level of the individual. As a result the task becomes increasingly difficult (Schweinle, Berg, & Sorenson, 2013). Therefore, there may be a social comparison of perceptions of difficulty. In the present study for example, Student A may witness other students in the class having difficulty running the cross-country course and as a result may believe the task is too difficult, unattainable and no amount of effort will result in success. Linnenbrink and Pintrich (2000) speculated low self-efficacy (low perception of ability to succeed on a task) might have an effect on individuals’ levels of effort and persistence, especially if they adopt performance goal orientations (goals to outperform others e.g. Elliot & Dweck, 1988), which are focused on high levels of competition. Students who compare themselves to others and are performance-oriented may only pursue tasks in which they feel confident to succeed. If the task is too challenging, students may perceive the task to be a threat and opt to cease the task in order to avoid failure in front of others (Elliot & Church, 1997). The final lower order theme identified in the data was: c) dislike feeling of exerting too much effort. Student C stated:

I think its…I don’t think I am fit enough to run 800 or more cause it just makes me really…well by the time I get to the finish line…it’s like (sigh), and I feel a bit dizzy and stuff

The immediate short-term effects of exercise, such as an increased heart rate and breathing rate, sweating, and redness in the face can be discomforting for some students who perhaps have never experienced these physiological changes in the body. Teachers need to make sure all students understand what physiological changes to expect. Student C for example attributed her exhaustion and dizziness from running 800 meters to her lack of fitness. However, one gets the sense that Student C had accepted her lack of fitness as a reason to avoid running the 800 meters again in the future. Students need to be encouraged and praised in order to increase their deficient effort and ability beliefs. Students need to be given guidance on how they can improve their fitness so
they believe that with training they are eventually able to sustain the effort that is required of them to complete the task.

**Unappealing task characteristics**

In the present study students expressed their dislike towards specific activities and tended to find activities that were deemed too difficult unpleasant. The lower order themes that formed therefore were: a) type of activity and b) task difficulty. The activity tended to be hugely important and would influence the students’ mood prior to and after the lesson. For example Student A said: “When it came to gymnastics I would be like ‘oh god its gymnastics…’” and Student B commented: “I really like the PE lessons but when it got to badminton I was like…no, I cant do that..”.

It may be that the students mentioned are deficient in their ability and effort beliefs towards gymnastics and badminton, which in turn has an adverse affect on their mood and consequently aids the student in establishing whether the characteristics of the task are appealing or unappealing. Student C supports the latter interpretation by saying:

> I think I try better or like my best when it’s like a sport I really enjoy and then if, kind of if it isn’t then I don’t think I put all my best into it.

The type of motivation an individual possesses may influence their affective responses such as enjoyment. For example past research has often shown that self-determined forms of motivation (i.e. intrinsic motivation and identified regulation) positively correlate with desirable responses such as positive affect (Ntoumanis, 2005; Standage et al, 2005). Enjoyment is a positive affect and includes feelings such a pleasure and fun (Scanlan & Simmons, 1992). Enjoyment is an intrinsic element and has been considered a defining feature of intrinsic motivation. In contrast, boredom has been associated with amotivation (Ntoumanis et al; 2004) and lack of persistence on a task (Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997). Student C in the present study has described the potential negative consequence (low effort) of failing to enjoy the task, and lack of enjoyment therefore presents a possible explanation for student disaffection in PE. Disaffection is a term used to conceptualise motivation, and incorporates an individuals’ physical and emotional (tiredness, boredom, sadness) withdrawal from an activity (Connell & Wellborn, 1991). It is important therefore that teachers create fun and exciting lessons that encapsulate students of all abilities in order to maintain interest and heighten self-determination.
The difficulty of the task was another important issue raised by the current students. Student D described her frustration in badminton, not enjoying the activity and perceiving the activity to be too difficult. Student D commented:

It was just really frustrating..it..I practiced at it when I went to Centre Parks with my auntie and everything but then apart from that I don’t really enjoy it because it was really hard and I just don’t like badminton.

It is important to note from the above quotation the association between task enjoyment and task difficulty. Student D has highlighted her lack of enjoyment in badminton being due to her perception of the task being too difficult. Students’ perceptions of task difficulty have been noted in the literature as potentially being an important variable that affects a students’ interest when engaging on learning tasks (Weidong et al; 2007). One may assume if a student shows no interest on a task they will also endure an absence of enjoyment whilst doing the task. Weidong and colleagues examined the role of perceptions of task difficulty in relation to self-perceptions of ability, intrinsic value, attainment value and performance. They conducted an ‘object manipulation’ task called ‘Lunastix’ whereby participants were instructed to juggle a baton between two handle sticks. Results showed that participants who perceived the task to be more difficult were likely to have lower levels of self-perceptions of ability, have low interest and low performance scores. Moreover, research has also supported our findings that individuals’ perceptions of task difficulty may influence student enjoyment. Smith and St. Pierre (2009) conducted a qualitative study to identify possible determinants of enjoyment in PE using an American and English sample of students between 14 and 18 years of age. After conducting a series of interviews, the findings showed that the ability level the activity was taught at was hugely influential in determining a students’ level of enjoyment. Furthermore, in the present study, Student D may have perceived her ability and actual success in badminton to be below what she perceived as the teachers’ expectations and/or her peers expectations, subsequently lowering her enjoyment of the task (Smith & St. Pierre, 2009). Low perceptions of competence and/or deficient ability beliefs may trigger students’ perceptions of task difficulty, thus decreasing enjoyment of the activity. Consequently, the activity may gradually become more unappealing over time.
**Insufficient task values**

All students viewed PE as important in order to improve fitness, prevent obesity and to be able to continue to participate in physical activity into adulthood. Student C stated:

“I think the same, it keeps you fit and stuff, and also I think it brings you together a bit more with other people and it can be like when you are older you can get into running and that will help you keep fitter so its kind of like giving you options in life”.

Therefore, the students did not demonstrate having insufficient task values. As a result, this theme was not pursued further in the interviews. This finding raises the question of how important valuing the task is to a students’ motivation. Can an individual see the importance of doing an activity but still not be motivated? Would doing a task to improve one’s fitness and health be an extrinsic reason for participating and therefore a student may be doing the activity because they “should” rather than because they “want to”. Students may value the reasons for keeping fit and participate due to PE being compulsory. Yet it is still plausible to find fitness activities unappealing (perhaps due to the difficulty of the task), have low ability beliefs and low effort beliefs; all of which encompass an amotivated individual. If an individual scores highly on three of the four amotivation dimensions it is fair to say amotivated behaviours may still be evident.

**Physical self-concept**

When analysing the data it was apparent that some of the students were uncomfortable with their physical self and the type of activity may enhance negative perceptions even further. Hence, the ‘perception of self’ was the lower order theme established from the general dimension physical self-concept (PSC). Self-concept is thought to be stable and is often described as multidimensional, meaning the self can be considered at a broad, global and domain level (Hattie & Fletcher, 2005). PSC is considered at the domain level and is believed by theorists to be the major component of our self-expression and our interaction with the world around us (Fox, 1997). Marsh and colleagues (1994) devised ten physical self-dimensions to represent PSC. These included: strength, body fat, activity, endurance/fitness, sports competence, coordination, health, appearance, flexibility and general PSC. To date, the literature has recognised that physical self-perceptions (i.e. physical self-worth, physical perceived competence) predict motivated behaviour in physical activity (Weiss & Williams, 2004). However there has been a depleted amount of research into the association
between amotivation and PSC, but the findings so far have shown PSC to be an important predictor of deficient ability beliefs amongst secondary school students in PE (Study 1). The present study supported the aforementioned findings in Study 1. For example, Student A described below how she felt her physical shape had an affect on her ability in PE:

um…the thing…I think its just not being um..sort of build for PE really…it doesn’t help if you know what I mean cause you can be really good at PE and then you can be really…you enjoy it but you still think that you are not very good and you know…it… I always think that you know…if I do um… I’m not that good at gymnastics I don’t necessarily like it but um… I just don’t think I’m the right person for gymnastics cause I can’t stretch, I can’t really do that sort of thing, so… that’s what, I don’t really.

In addition, student A has specifically commented on gymnastics as an activity she feels less competent because of her build. Different activities have different demands on the physical body and some body types are more suited to certain activities than others. As the PE curriculum is so diverse by offering a wide range of activities, there is no doubt going to be some activities that do not match the ‘body profile’ of some students. One of the sub domains of PSC mentioned previously was ‘body appearance’ and perhaps can be viewed under the general construct ‘body image’, which encapsulates an individuals thoughts and beliefs regarding body shape and appearance (Cash & Pruzinsky, 2002). In sport and exercise, adolescents evaluate their physical appearance and may have an affective reaction to these evaluations (Cash & Fleming, 2002). Such affective reactions have been termed ‘social physique anxiety’ of which has been associated with body attractiveness in females (Smith, 2004). The key issue here is that some students may try and avoid specific activities that evoke anxiety about their physical appearance, (e.g. gymnastics). Avoidance behaviours in PE, for example, may be suddenly feeling ill before the lesson, being absent from school, injury, and forgetting PE kit. However, consistently avoiding PE is difficult for students due to the negative repercussions it would entail e.g. detentions. Therefore the student may have to endure the feelings of high body anxiety surrounding her body appearance before, during and after the lesson and subsequently such anxieties may hinder a students’ willingness to engage in exercise behaviour in the future.

Perceptions of teacher need support

Supporting individuals’ psychological needs for autonomy, competence and relatedness has been shown in the literature as being crucial for increasing self-
determination (Deci & Ryan, 2000). Inadequate need support has also been related to amotivation in PE research (Shen et al; 2010b; Study 2) and it is therefore imperative that students’ perceptions of teacher need support is explored further to understand amotivation. The findings in this study identified students’ perceptions of relatedness and competence support as the higher order themes, however perceptions of autonomy support did not feature in the students’ responses.

**Low perceived relatedness support**

The lower order themes that emerged from this dimension were: a) minimal attention from the teachers and b) low empathy from the teachers. Student B expressed her disappointment that the teachers never seemed to acknowledge when she performed well, only when she performed badly. For example she stated:

> I was always the one that was in the back and kind of when I was doing it really well they weren’t looking and when I wasn’t they were looking so its kind of like…oh gosh… but um…

Student B continued by saying: “I find it like quite unfair how I’m still in the background with my hockey stick”. Self-determination theory suggests that contexts which support the need for relatedness, that is, people feel a sense of belonging and connectedness, facilitate intrinsic motivational processes. In contrast, when people feel alienated, they are less likely to experience enjoyment or interest in activities and such feelings of rejection may undermine intrinsic motivation (Deci & Ryan, 2000). Student B describes how she feels “in the background” which may evoke feelings of rejection due to not receiving attention from the teacher.

The importance of empathetic teachers was highlighted in the findings of Study 3a, whereby the students stated their preference for “kind” teachers. In collaboration with the latter findings, the present study found students’ perceived their teachers to have low empathy in PE. For example, Student D discussed the pain she felt in her back when playing hockey. She said: “…it still really hurt me and then they just go ‘you’ll be fine’”, highlighting minimal warmth and affection from the teacher towards the student. Both empathy and attention have been found to be two observed behaviours that directly indicate the quality of teacher relatedness support (Haerans et al, 2013).

**Low perceived competence support**

This higher-order dimension encompassed two lower order themes: a) insufficient feedback and b) absence of encouragement when performing a task well. Social contextual events such as feedback and reward during an action enhance
students’ feelings of competence (Ryan & Deci, 2000). When teachers provide positive and informational feedback in response to their students’ performances, perceived competence and intrinsic motivation is improved (Koka & Hein, 2003, 2005). Positive feedback would be expected to include positive statements about effort (e.g; “well done” or “excellent effort”) or skill (e.g; “fantastic dribbling using your left hand”). However, Student D highlighted the limited feedback she received when playing hockey. She said:

I don’t really like the hockey because it was like really annoying and it always really hurt my back and they would say ‘oh your holding it wrong’ and then I would hold it differently and it still really hurt me and then they just go ‘you’ll be fine’.

Caution has to be taken when interpreting Student D’s comments as her interpretation of events may not be wholly accurate. Despite this, Student D has vocalised a negative experience in hockey, entailing being in pain and effectively not being provided informative advice as to how to rectify the situation to make her feel comfortable. Student A supports the lack of informative feedback from the teacher by commenting how she does not know how to improve in PE:

Um…well I’m trying to improve er…how to… I don’t really know how to improve the thoughts and make yourself believe that you can do it, and sometimes I don’t think that and I feel that I cant do that…I don’t know.

In the physical education context it has been recommended that teachers provide positive feedback that comprises of information about competence, which in turn will likely enhance students’ interest in PE and increase student effort (Hein & Koka, 2007). In light of the aforementioned findings, inadequate competence support from the teacher may decrease student interest, effort and intrinsic motivation and facilitate amotivation (Shen et al; 2010b).

**Peer motivational climate**

Close attention to the social context which students are educated in is warranted to understand amotivation further. Students interact extensively with their peers during PE lessons, extra-curricular activities and school competition and use peers as a measure of competence in sport contexts (Smith, 2007). Therefore, peers have the potential to hugely influence student motivation and investigations are needed to explore the effect of the peer motivational climate on amotivation. Using peer motivational climate as the general dimension, the higher order themes taken from the
PeerMCYSQ (Ntoumanis & Vazou, 2005) that were identified in the data were: a) intra-class ability, b) intra-class conflict and c) peer relatedness support.

**Intra-class ability**

The lower order theme identified was: a) compare themselves to others. It was apparent during the interviews that some of the students were attempting to analyse the strengths and weaknesses of the more able students in order to improve their ability. For example student B stated:

> I try to like compare myself to the A team and ask what’s their strengths and their weaknesses, and if so I can try and like beat their weaknesses but probably not their strengths.

The above quotation supports Festinger’s hypothesis mentioned earlier, which stated that people have an innate desire to self-evaluate. Student B has expressed her willingness to “try” and therefore is not describing typical amotivated behaviours but rather is perhaps still self-determined to improve. However, it is important to note that continual comparison of the more able over time may result in a decrease in self-determination and the presence of maladaptive behaviours such as giving up on tasks and opting to play more sedentary roles For example Student B said “…and they’ll be people like flipping across the mat and I’d be in the corner”.

Intra-class ability has been acknowledged as an ego-involving feature (Ntoumanis & Vazou, 2005) demonstrated in an ego-oriented motivational climate that reinforces social comparison and evaluation (Ames, 1992; Nicholls, 1989). Furthermore, Elliot and Church (1997) expanded the task/ego goal oriented model to include approach and avoidance goals represented in the 2 x 2 achievement goal framework (Elliot, 1999; Elliot & McGregor, 2001). For example, individuals with performance avoidance achievement goals tend to avoid normative incompetence (aiming not to be outperformed by others), which is the opposite of performance approach achievement goals (focusing on outperforming others). Student B has described how she tries to “beat their weaknesses”, which may be an example of not wanting the more able to outperform her in class. In PE students are continually on ‘centre stage’, and being ‘shown up’ by students of a higher ability, which can be embarrassing. It would make sense therefore, that some students might try and avoid a humiliating situation from occurring.
Intra-class conflict

This theme involves the display of unsupportive and negative behaviours, such as laughing at other students, criticising others and complaining if a team loses. Thus, the lower order theme identified was; negative comments from others. One of the students in the study described her disappointment when she overheard the more able teammates complain that they were playing in a team with weaker students. She stated:

It always used to make me feel upset when I get put with an A team and I think ‘oh yes we have a chance’ and I hear them say ‘oh great I’m with all the C teams’ and it made me feel really like ‘oh dear’ (laughs), not that good then am I.

The above quotation suggests that negative comments from peers may induce feelings of low perceived competence and consequently, over time, motivational difficulties. Nevertheless, Student B went on to comment further by saying:

I really like playing competitive because then you get the sensation when you win like ‘ha loser, you so lost…’ but like when you lose your like ‘yeah we weren’t trying anyways, so like, we let you win’.

Even though Student B describes her enjoyment playing competitively, she has light heartedly described negative student-student communication that may take place after competition. Negative words such as “loser” may be harmful to vulnerable students who have low self-esteem and deficient ability beliefs. Although there is limited research that has explored the consequences of intra-class conflict, Vazou and colleagues (2005) support the importance of this component in peer motivational climate research.

Peer relatedness support

The relatedness support dimension included the lower order theme; importance of a friendly team atmosphere. Relatedness support is defined as the feeling of belonging, being connected with the group and a creation of a friendly atmosphere in the team (Vazou et al, 2005). This theme was evident when the students explained the value of having encouragement from their peers and positive feedback related to the task. One student commented:

If you’re the loser its all right because you know you have done your best and everyone is really supportive and even the team that win say you did really well and stuff, and its fun playing like that.

Feeling of belonging to a group and being accepted by others has been noted as being important to individuals’ relatedness need satisfaction (Deci & Ryan, 2000; Vallerand,
Student C exemplifies the importance of this need as being a significant factor in a peer motivational climate by saying: “I really enjoyed having the team around because you kind of get closer by playing.” Thus, having a sense of unity may help influence positive affect (enjoyment) and motivation.

**Expectations of PE in secondary school**

The students were asked question about their expectations of PE in secondary school to further explore their feelings towards PE across the transition. It is valuable to decipher not only the anxieties the students may be experiencing prior to starting PE in senior school, but also what excites students in order to better understand when and why amotivation occurs.

**Task characteristics**

In collaboration with the findings in Study 3a, the characteristics of the task were deemed as being extremely influential to how students felt about PE in secondary school. The higher order theme under the general dimension task characteristics was; different activities.

**Different activities**

The lower order theme recognised from the data was students’ excitement about having more opportunities in PE. Students expressed their excitement about doing PE in secondary school and were most looking forward to having the opportunity to try new sports. One student described her excitement and made a comparison to the opportunities she had in primary school:

So I was excited about lots of the new sports that we hadn’t done previous school um… and eh, I just thought that there would be lots more opportunities to do things I enjoy in sports and things, whereas the other school you didn’t really um.. you had to, it was only a couple of clubs, it was hockey, and rounders and netball and things and that would be it, but here you get to do rowing and things like that.”

The latter quotation highlights that students who have low self-determination or amotivation may already be starting to become “bored” of the traditional sports such as hockey, netball and rounders that have been taught from Year 5 (9 years old). The statutory guidance from the NCPE (2013) states that at key stage 2 (Years 5-6) “pupils should be taught to play competitive games and modified where appropriate”, and the programme continues to give examples of a number of activities that could be taught e.g. badminton, basketball, cricket, football, hockey, netball, rounders and tennis (Department for Education, 2013). In the present study, the primary school was the
main feeder school into the secondary school and therefore to help ease the transition across PE the students were taught modified versions of hockey, netball and rounders to provide them with the basic skills and concepts in preparation for secondary school. In theory the latter point makes sense, however, for some students the prospect of being taught hockey, netball and rounders for another five years may be cumbersome and student interest in PE may as a consequence deteriorate. A question that has recently been addressed among researchers is: ‘Will a student with little skill in these complex sports experience any benefit from prolonged exposure to these sports in physical education?’ (Moore, 2013). In the present study, the student was excited about trying new activities such as rowing, perhaps searching for an activity she may enjoy and thrive in. It is important therefore that teachers offer students the opportunity to try new sports in order to maintain student interest.

**Social comparison of ability**

Social comparison is rife in PE environments due to students continually self-evaluating their ability with others in the class, and subsequently peer comparison was identified as the higher order theme.

**Peer comparison**

Barnes and Spray (2013) found that PE students’ low perceptions of ability compared to others in the class negatively impacted on their physical self-concept (PSC), engagement and disaffection. In light of the latter findings, it is concerning that the students in the present study are already making references to the ability of others before they have the opportunity to use the PE class as a frame of reference. The lower order themes that emerged from peer comparison was: a) evaluating others’ ability and b) comparison to more able. Although Student C expressed her excitement about PE, it was clear that assessing other students’ abilities was important: “…and its kind of nice meeting all the new people and getting to know their strengths and stuff.” It might be important to students to make an early assessment of where they ‘fit in’ to the class in terms of their ability. Student A on the other hand discussed her concern with having girls in the school who are more able:

I did sort of think that there will be lots of other..sort of bigger girls that might, well not saying anything but well, might be a bit better or you try and umm… you try and be…try and…umm I don’t know… try and be like them.
Perceptions of teacher need support

Increasing amounts of research are continuing to explore the influence social agents such as teachers have on students’ motivation in the classroom (Reeve & Jang, 2006) and in PE (Shen et al; 2010b; Taylor & Ntoumanis, 2007; Taylor, Ntoumanis, & Standage, 2008). Moreover, the findings in Study 2 and Study 3a have identified students’ perceptions of teacher need support to influence the amotivation dimensions. In the present study, the students implied that autonomy support may be inadequate in secondary school and discussed the importance of feedback to support competence. Hence, the higher order dimensions that derived from the data were; perceptions of autonomy support and perceptions of competence support. Relatedness support from the teacher did not feature in the students’ responses.

Perceptions of autonomy support

Students perceived the teachers in secondary school would be controlling. For example Student C said: “When I heard about the sports I was like, ‘no they’re going to make us work harder they’re going to limit us to stuff’”. If students feel that they are being made to do a task, one may assume that teachers are using instructional behaviours such as controlling language to pressure students into compliance (Reeve & Jang, 2006). When students are controlled by teachers, their inner motivational resources are put to one side and they are shaped by the teachers’ agenda, and motivated by external contingencies and pressuring language (Reeve & Jang, 2006). Student C is not expecting to have high volition in her PE lessons, whereby she feels she has high psychological freedom and a sense of choice over her actions. As a result, when Student C starts secondary school she may have low perceived autonomy in PE due to her preconceptions across the transition. If the PE teacher fails to support her autonomy, then over time amotivation may increase (Study 2).

Perceptions of competence support

Students identified the value of receiving quality feedback from the teacher when practicing skills in hockey and had an expectation that PE teachers in secondary school would be more specialised to be able to do this. The lower order theme therefore was; important that teachers provide informative feedback. Student A commented:

… they don’t tell you that, they try and help you and that and show you what to do and um… you know say if I was holding my hockey stick wrong, um… the teacher would come up and just say ‘ ooh um.. maybe the better way is to hold it like this’ and then show you how to hold it properly and um.. it’s just a lot easier than saying ’ your holding it wrong’.
Research in the physical education domain has found a positive relationship between perceived positive informational feedback and perceived interest when perceived competence acts as the mediator. (Koka & Hein, 2005). In addition, these authors found that perceived positive informational feedback led to positive motivational outcomes such as higher effort exertion among adolescent students in PE. Even though these findings did not include perceived autonomy and relatedness as other potentially significant mediator variables, the findings still signify that perceived competence may have an important meditational role, which teachers should support. For example the feedback that teachers give should include information about competence, e.g. “Well done, you kept your elbow in and really followed through. Keep it up, your shot is looking great”(Alderman, Beighle, & Pangrazi, 2006). Thus, teachers are likely to enhance student interest and subsequently students will invest greater effort in lessons.

**Peer motivational climate**

The higher order theme that developed from this general dimension was peer relatedness support, taken from the PeerMCYSQ, however this dimension was a minimal discussion point.

**Peer relatedness support**

The lower order theme identified was; importance of having support from friends. Student A commented on wanting to play games with and against “people she knows”, perhaps to avoid intra-class conflict. She stated:

> Playing games but with people you know cause with other schools, we used to play against other schools and you always feel a bit ooh you know I hope they don’t go ‘oh well’, you know ‘we beat you’, and I think just with other people around you who know you and you know them, so you feel a bit more comfortable about what you are doing.

Student A may have experienced negativity during competition in primary school, which may be the reason she has expressed the importance of being supported by friends to feel more comfortable. Relatedness support is defined as the facilitation of belonging and being part of a group in a friendly atmosphere. It is therefore important
Table 6.1: *Amotivated Students Experiences of PE in Primary School. Hierarchical Development of the Raw Data, Lower Order Themes, Higher Order Themes and General Dimensions.*

<table>
<thead>
<tr>
<th>Raw Data</th>
<th>Lower Order Themes</th>
<th>Higher Order Themes</th>
<th>General Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Um…I really enjoy the PE lessons…um…I think, I might not necessarily be good at them but I still enjoy them, and I like hockey and things.</td>
<td>Self-evaluation of ability</td>
<td>Deficient ability beliefs</td>
<td>Amotivation</td>
</tr>
<tr>
<td>B: When it comes to tennis I try to do my best, doesn’t always work out.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A:…you enjoy it, but you still think that you are not very good and you know…it’s…I always think that you know…if I do…um…I’m…not that good at gymnastics.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: I really like the PE lessons but when it got to badminton I was like…no, I can’t do that.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: Oh well I can’t do it so there is not much point putting effort into it. So I think just believing that you can do it would make it a lot easier, but it’s a lot harder than it sounds.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: Personally I don’t think that I am brilliant at PE, um…I still enjoy it but I don’t think I’m brilliant and I think…um…it’s just…I think most people they find it very hard to sort of think that they are alright and ok, and they don’t have to do things to try and make them feel better about themselves…and I think that sports it’s just…it’s I do enjoy it but I still don’t think I’m brilliant at it and I don’t think that I’m the right sort of person to do it if you know what I mean.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: Yeah and it was always the same people in the A team, that’s obviously because they are really high standard.</td>
<td>Peer comparison of ability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: I try to like compare myself to the A team and ask what’s their strengths and their weaknesses, and if so I can try and like beat their weaknesses but probably not their strengths, but kind of thing like that, but I don’t want to compare but I do.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: Cause I always compare myself to the best and go ‘oh I never going to be as good as them’. I don’t think I believe in myself any time.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: I still do try really hard but then I think they still try really hard as well and I’m never going to be as good as them.</td>
<td>Self-perception of effort</td>
<td>Deficient effort beliefs</td>
<td></td>
</tr>
<tr>
<td>D:…and they’ll be people like flipping across the mat and I’d be in the corner.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: I think I tried pretty hard but not the hardest I could.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Data</td>
<td>Lower Order Themes</td>
<td>Higher Order Themes</td>
<td>General Dimensions</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>C: I think it’s…I don’t think I am fit enough to run 800m or more cause it just makes me really…well by the time I get to the finish line…it’s like (sigh) and I feel a bit dizzy and stuff.</td>
<td>Dislike feeling of exerting too much effort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: If you try harder then you can get better, but sometimes you’re so sort of so overwhelmed of what you got to do…cross country you sort of think ‘oh’, you know you got to do that run for about 400 meters or something, you just think ‘mmm I don’t really want to do it’. I think that just makes you feel, ‘oh well I can’t do it so there is not much point putting effort into it.</td>
<td>Give up easily on challenging tasks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: When it came to gymnastics I would be like ‘oh god it’s gymnastics…’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: I really like the PE lessons but when it got to badminton I was like…no, I can’t do that.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: I do like most of it but I think the only part that I didn’t actually enjoy was the cross-country because it’s just…I can do like sprints and stuff but cross-country just is not my thing…um…but after all the practices it was alright even though I didn’t really look forward to it that much, well, hardly any of us did.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C: I think I’m kind of the same but I think I try better or like my best when it’s like a sport I really enjoy and then if, kind of if it isn’t then I don’t think I put all my best into it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: It was just really frustrating. I practiced at when I went to Centre Parks with my Auntie and everything but, then apart from that I don’t really enjoy it because it was really hard and I just don’t like badminton.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: I think it’s just not being um…sort of build for PE really. It doesn’t help if you know what I mean, cause you can be really good at PE and then you can be really…you enjoy it, but you still think that you are not very good and you know…it’s…I always think that you know…if I do um…I’m not that good at gymnastics, I don’t necessarily like it but um…I just don’t think I’m the person for gymnastics cause I cant stretch, I cant really do that sort of thing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: I do enjoy it, but I still don’t think I’m brilliant at it and I don’t think that I’m the right sort of person to do it if you know what I mean.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: No I don’t think that I can do it. I enjoy it but I don’t think I’m built for it. I’m more academic then I am sporty.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B:</strong> I was always the one at the back and kind of, when I was doing it really well, they weren’t looking and when I wasn’t they were looking, so it’s kind of like…oh gosh. B: I find it like quite unfair how I’m still in the background with my hockey stick.</td>
<td>Minimal attention from the teachers</td>
<td>Low perceived relatedness support</td>
<td>Perception of teacher need support</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>D:</strong> It still really hurt me and then they just go ‘you’ll be fine’. D: It made me feel uncomfortable, I didn’t really like it um…I don’t think I’m…I just don’t like it.</td>
<td>Low empathy</td>
<td>Insufficient feedback</td>
<td>Low perceived competence support</td>
</tr>
<tr>
<td><strong>A:</strong> Um…well I’m trying to improve…how to…I don’t really know how to improve the thoughts and make yourself believe that you can do it and sometimes I don’t think that and I feel that I cant do that…I don’t know.</td>
<td>Insufficient feedback</td>
<td>Low perceived competence support</td>
<td></td>
</tr>
<tr>
<td><strong>B:</strong> I try to like compare myself to the A team and ask what’s their strengths and their weaknesses and if so I can try and like beat their weaknesses but probably not their strengths. B:…and they’ll be people like flipping across the mat and I’d be in the corner. B: Yeah and it was always the same people in the A team, that’s obviously because they are really high standard.</td>
<td>Compare themselves to others</td>
<td>Intra-class ability</td>
<td>Peer motivational climate</td>
</tr>
<tr>
<td><strong>B:</strong> It always used to make me feel upset when I get put with an A team player and I think ‘oh yes we have a chance’, and I hear them say ‘oh great, I’m with all the C teams’ and it made me feel really like ‘oh dear’ (laughs), not that good then am I.</td>
<td>Negative comments from others</td>
<td>Intra-class conflict</td>
<td></td>
</tr>
<tr>
<td><strong>B:</strong>…but I really like playing competitive because then you get the sensation when you win like ‘ha loser, you so lost’, but like when you lose your like ‘yeah we weren’t trying anyways, so like, we let you win’.</td>
<td>Importance of a friendly team atmosphere</td>
<td>Peer relatedness support</td>
<td></td>
</tr>
<tr>
<td><strong>C:</strong>…but if you’re the loser it’s all right because you know you have done your best and everyone is really supportive, and even the team that win say you did really well and stuff, and it’s fun playing like that. C:…like rounders, cause you all play as a part of a team, even the opposite team are just like ‘yeah’ if they are your friend. C: I really enjoyed having the team around because you kind of get closer by playing.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Raw Data</th>
<th>Lower Order Themes</th>
<th>Higher Order Themes</th>
<th>General Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: So I was excited about lots of the new sports that we had not done in previous school um… and I just think that there will be lots more opportunities to do things I enjoy in sports and things, whereas the other school you didn’t really, um…you had to, it was only a couple of clubs, it was hockey and rounders and netball and things and that would be it, but here you get to rowing and things like that. A:…and you also have all the other clubs.</td>
<td>Excited about more opportunities</td>
<td>Different activities</td>
<td>Task characteristics</td>
</tr>
<tr>
<td>B: It’s kind of nice meeting all the new people and getting to know their strengths and stuff and it’s…yeah.</td>
<td>Evaluating others’ ability</td>
<td>Peer comparison</td>
<td>Social comparison of ability</td>
</tr>
<tr>
<td>A: I did sort of think that there will be lots of other, sort of bigger girls that might, well, not saying anything but, well… might be a bit better or you try and um…I don’t know…try and be like them.</td>
<td>Comparison to more able</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: When I heard about the sports I was like, ‘no they’re going to make us work harder, they’re going to limit us to stuff.’</td>
<td>Teacher making them do a task</td>
<td>Perceptions of autonomy support</td>
<td>Perceptions of teacher need support</td>
</tr>
<tr>
<td>D: …they don’t tell you that, they try and help you and that, and show you what to do, you know, say if I was holding my hockey stick wrong, um… the teacher would come up and just say ‘ooh, maybe the better way is to hold it like this’ and then show you how to hold it properly and um… it’s just a lot easier than saying ‘you’re holding it wrong you have to hold it like this’.</td>
<td>Important teacher provides informative feedback</td>
<td>Perceptions of competence support</td>
<td></td>
</tr>
<tr>
<td>D: Playing games but with people you know, cause with other schools we used to play against other schools and you always feel a bit, you know, I hope they don’t go ‘oh well’, you know ‘we beat you’. I think just with other people around you who know you and you know them, so you feel a bit more comfortable about what you are doing.</td>
<td>Important to have support from friends</td>
<td>Peer relatedness support</td>
<td>Peer motivational climate</td>
</tr>
</tbody>
</table>
that teachers recognise that peers are being hugely influential in PE and aim to group students with those peers they feel are supportive.

**Phase 2: Experiences of PE in secondary school**

During the second interview, students were first asked to describe their experience of PE in secondary school and whether they could highlight any differences with PE in primary school. At the end of the interview students were asked to discuss the aforesaid expectations and to shed light on whether their expectations were met. Based on theoretical evidence and the findings in Study 3a and phase 1 of the current study, the ‘a priori’ themes that were established as the general dimensions were, amotivation, perceptions of teacher need support, physical self-concept, peer motivational climate and teacher motivational climate.

**Amotivation**

All students completed the AI-PE before the commencement of the tracking interviews to identify an increase or decrease in individual amotivation scores compared with their responses prior to the transition. Results showed the mean scores for two of the students remained above the midpoint and one student who scored below the midpoint previously, scored above the midpoint after the transition. The remaining student was absent from the second interview so was unable to be tracked. When students were describing their experiences of PE in secondary school, the four amotivation dimensions (deficient ability beliefs, deficient effort beliefs, insufficient task values and unappealing task characteristics), remained evident and subsequently formed the higher order themes of the general dimension; amotivation.

**Deficient ability beliefs**

The lower order themes derived were: a) self-perception of ability and b) comparison of ability to peers. Both themes were also identified during the first interview when students were describing their experiences of PE in primary school. It seems therefore, that the students’ perceptions of their ability have remained relatively stable across the transition and some of the students still uphold the belief that they are unable to accomplish the desired behaviour in PE activities. For example, Student A stated, “…well it's I mean I'm rubbish at tennis” and “I've never been in any sort of teams or anything because I'm not that sporty.” Both of these latter statements give the impression that students as young as 11 years old believe ability to be a stable construct and therefore support Dweck’s theory (1986, 1999) that at age 11 some children may focus solely on an entity view of their ability (believing ability as fixed) as opposed to
an incremental view (believing ability can be changed with effort). Student A explained, “I sort of get halfway through and I realise I am not doing that great”. In other words, she may be applying effort, but has realised that there may be a limit to which effort exertion is going to affect her performance. The results therefore partially support research that has shown specific ability beliefs on academic performance become more negative after the transition (Wigfield & Eccles, 1994). However, the latter researchers did not explore ability beliefs in a PE setting so the findings cannot be generalised. Despite this, the view that ability beliefs increase in negativity immediately after transition is important to understand further.

Furthermore, the results showed that students were continuing to compare themselves to their peers, which were consistent with their experiences in primary school. Student A explained:

I sort of find myself comparing myself to the other people and thinking, well they’re good at it why aren’t I, you know and it’s always sort of hard.

**Deficient effort beliefs**

Perceptions of student effort beliefs were only discussed in relation to perceptions of ability. In other words, one student described how she gave up on a task when she realised she was not performing well:

I sort of get half way through and I realise I am not doing that great so I just give up and think, ‘oh well, if I’m not doing brilliant, I’m not going to bother.’

When the student was probed further and asked to explain how she came to the realisation she was not “doing that great”, she said she knew from comparing herself to others in the class. What is important in the above quotation is that peer comparison seems to have a detrimental effect on students’ ability beliefs and effort beliefs in a short time period. The current findings demonstrate that within a single PE lesson, if a student uses the class as a frame of reference in which to evaluate self ability and perceives themselves to be less able, the knock-on effect could be an increase in deficient ability and effort beliefs, displayed in the execution of maladaptive behaviours such as giving up on tasks. It is therefore even more important that teachers differentiate their classes appropriately and support students’ need for competence.

**Insufficient task values**

This higher order theme was not a common feature in the interviewee’s responses, however students were in agreement on the view that specific tasks did not hold any worth in the PE curriculum. For example, Student C said:
…because if it’s like hockey, its like I’m never going to use hockey, but like netball, netball is useful for basketball.

Students did not see the purpose of hockey (especially if they were not selected for the school teams) and therefore did not see themselves continuing playing hockey outside of school and/or into adulthood. It is the teachers’ responsibility to explain to students the benefits of being taught hockey in school in order to increase students’ task values. If teachers are unable to justify why year on year, students of all abilities are taught hockey, then one poses the question: Should all students continue to be taught traditional games throughout secondary school?

Unappealing task characteristics

The final amotivation dimension identified was unappealing task characteristics which comprised of the following lower order themes: a) task specific, task difficulty, c) task induced anxiety, and d) personal concerns. The type of activity has been consistently found in Study 3a and phase one of the present study to be an important factor for amotivated students. The current students described how the type of activity determined their mood state and consequently their effort. Activities they enjoyed tended to be the activities they would invest more effort in. The students continued to highlight specific activities as being important to their experiences in PE. Student C expressed her dislike for running activities, “its just the whole thought of just running”, and perceived the activity to be repetitive and boring. Similarly, Student A stated:

I think we should get badminton back, well because we did it at junior school, and rounders because um… I know people are probably going to disagree but I really hate cross-country.

Student’s dislike for cross-country has regularly been expressed among students in Study 3a and the present study. It is the main activity that students dread, yet are required to participate in the activity throughout their school years. There may be a number of reasons why students dislike cross-country, but students’ perceived difficulty of the task has been found to be one important explanation. In the current study, Student A said:

I don’t think anyone is going to see a hill and go ‘oh great, I cant wait to get up there’, they’re just going to go, ‘I can’t wait to get off there’.

Student D followed the conversation by saying, “plus its hard running in grass and mud” and “there are lots of obstacles as well”. Due to the task deeming to be
challenging to the students, anxiety was being induced from the task itself. For example Student D said:

There is like branches which spray out from the trees and then everyone trips over them which is not very nice.

The final lower order theme acknowledged was students’ personal concerns towards specific activities which subsequently “turned them off” the activity itself. For example, Student D disliked swimming due to having to get her hair wet and then having to wait for her hair to dry. What is more, Student D also described the need for equipment in hockey as being a potential barrier towards her enjoyment. She stated:

I’ve never really liked hockey, yeah it hurts my back and you need so much stuff like the hockey stick. Mine is too small so I have to get a new one, then I’ve got to find the time to get one, and then with like netball, its like PE kit…done, instead of shin pads, mouth guards and hockey stick.

Student A supported by saying:

…and you also need a whole new…its like a new sort of kit really because you have to get the astro shoes and things like that.”

For young students who are required to be more independent in secondary school compared to primary school, organising day-to-day resources and equipment needed for lessons may be problematic. Students may subsequently forget items of PE kit and endure the negative consequences as a result, such as a school detention. This therefore may induce negative feelings towards the teacher and the activity, and over time the student may increase their dislike towards PE in general.

**Perceptions of need support**

The importance of teacher need support on influencing students’ amotivation has already been stressed in recent literature (Shen et al; 2010b; Study 2). Collaboratively findings of Study 3a and phase 1 of the present study have demonstrated the value of teachers’ support for autonomy, competence and relatedness as a potential reason for amotivated behaviour among students in primary and secondary school. In the current study, we see the emergence of teacher need support as being a crucial factor in forestalling a decrease in amotivation in PE. Thus, the higher order themes were: perceived competence support, perceived autonomy support and perceived relatedness support.
**Low perceived competence support**

The lower order themes that developed were: a) importance of demonstration, b) students not feeling they are improving, c) insufficient positive feedback and d) less skill practice compared to more able. Overall, student’s perceptions of competence support from the teacher were relatively low, and during discussion some students volunteered ideas as to how competence may be enhanced. For example, Student A commented on the difficulties she has during swimming lessons due to the teacher not being able to get into the pool and give a clear demonstration. She said:

> Yeah its easier to…cause in the pool you cant…the teachers’ always trying to help you try, you know…swim but cause they cant get…well, like get in and show you, it’s quite hard. You know they’re doing…so in dance they can sort of help you.

Although it may be impractical for teachers to teach swimming to pupils from inside the pool, Student A has highlighted the necessity of having clear demonstrations from teachers to aid in skill improvement and perhaps increase perceived competence. The results also found students’ perceptions of teacher competence support to be relatively low, with one student emphasising her desire “to be pushed” in lessons: “I feel like I am not being pushed, and I want to be pushed.” In addition, Student A discussed the lack of quality feedback she received in her dance lessons by saying:

> I think more feedback would be really good as well, cause in dance I am not very good and I’d like to get better but they don’t really ever say…they film it and then give it to you and say “watch this” and see what you could improve but its not from another persons point of view its sort of just on your own…yeah.

Furthermore, comments from Student A throughout the interview suggested the implications lack of competence support may have on students’ perceptions of their ability and on motivated behaviours, such as effort. Lack of encouragement from the teacher whilst performing a task may hinder motivation during an activity, especially when a student is deficient in their ability and effort beliefs to begin with. Unless students feel encouraged to ‘keep trying’ in the belief they are able to succeed, they may give up altogether.

**Perceptions of autonomy support**

The literature to date has shown the importance of supporting an individuals’ autonomy to increase autonomous forms of motivation such as intrinsic motivation and identified regulation (Ryan & Deci, 2002). An individual with high autonomy is intentionally engaging in a particular behaviour and believes their actions emanate
from themselves and the decisions they make (internal locus of causality). They also have high volition, meaning individuals feel they are free to make decisions on how, what and when to do something (Reeve, Nix, & Hamm, 2003). The findings of the present study highlighted the students may have low autonomy. One student described her desire to be allowed more freedom to choose the sports that they participate in: “I think we should be able to choose what sports we do…” She continued to explain that she did not value activities such as hockey and therefore did not understand why she had to continue to play. Teachers therefore can help develop students’ inner motivation by supporting a students’ autonomy in the lesson. In PE for example, teachers could support students’ autonomy by asking students for feedback on the activities taught, differentiate tasks and allow students the opportunity to choose the task they prefer. In collaboration with the latter teaching behaviours, Reeve and Jang (2006) found instructional behaviours such as listening, allowing time for independent problem solving, praise, and encouragement of effort were positively correlated with student’s perceptions of teacher autonomy support. However, this was a laboratory study using university teachers as the participants. The participants were randomly assigned to the role of ‘teacher’ or ‘student’ and the ‘teacher’ had to devise an instructional strategy in order to help the student solve a puzzle. The ‘students’ were then given a questionnaire to assess their perception of autonomy support from the ‘teacher’. Although the latter study provides us with interesting information on what behaviours constitute as autonomy supportive, the research was not conducted in a real-life school setting and/or in the PE context.

**Perceptions of relatedness support**

Student’s perceptions of their relationships with their teachers may have an impact on student motivation (Ryan & Patrick, 2001). Moreover, Reeve (2002) believed student’s perceptions of relatedness from the teacher was extremely important when a task was deemed uninteresting and according to Shen et al (2010b), teachers who do not support student’s relatedness will promote amotivation in PE. Individuals have a psychological need to feel connected with others in their social environment and if this need is met they may feel more self-determined (Deci & Ryan, 1985). In the current study, the students described in detail how they felt they were not receiving any attention from the teacher in the lesson and felt rejected and ignored as a result. Minimal attention from the teacher was subsequently the lower order theme that was formed. Student B describes this rejection:
I’m in the D team for netball and all the teachers always phone to say they get the A team, so they get the proper practice and theirs us kind of like not...cause there is only like three or four C/D matches in a year so there probably going to be like “oh it doesn’t matter, they’ve got a match next week and they’ll focus on them.”

Student B has suggested feeling discarded due to being in the D team and has highlighted teachers may prioritise those students who are more able by averting their attention away from less important players. Student B continued to explain how the teacher failed to acknowledge when she was performing well due to being distracted by her phone. Relatedness support has been strongly associated with teachers who are receptive to students’ needs (Perlman & Webster, 2011). Student B for example stated:

I know that when um.. we play netball and my teachers sort of like looking at her phone or looking the other way and I’m kind of playing my best I’m like ‘what, why aren’t you watching me’.

Thus, students may feel disconnected with the teacher and possibly disengage from the task. Furthermore, Perlman (2014, 2015) drew attention to the importance of relatedness support in a group of amotivated PE students and suggested that amotivated students need to feel connected in the lesson before motivation can be facilitated via teachers’ autonomy and competence support.

**Physical self-concept**

Students reported dissatisfaction with their physical self prior to the transition into secondary school and continued to portray having a low physical self-concept after two terms in secondary school. In other words students’ PSC has not decreased. The higher order theme that was developed from the results was; low PSC and the lower order theme derived was; body image concerns.

**Low physical self-concept**

Student A specifically mentioned gymnastics as an activity in which she felt most uncomfortable: “yeah like in gymnastics I’m just like mmm, trying to hide myself”. Gymnastics is an activity in school whereby students often have to wear a particular item of PE kit. Students are often required to wear cycling shorts and a polo shirt. Student A describes how she finds cycling shorts uncomfortable:

I think sometimes the um..., the sort of kit you have to wear can be really, it can sort of make you feel very uncomfortable and plus you have to wear these weird little cycling short things.”
Student C also commented: “they make you really chubby around the legs.” The PE kit therefore, has accentuated an underlying concern with body image. Not being able to hide one’s body shape under baggy clothing may cause students anxiety and embarrassment and may subsequently make the activity increasingly unappealing to the student. Swimming is another activity whereby students’ physical shape is on show. Future research would do well to explore amotivation across different activities to identify if the activity itself predicts amotivated behaviours.

**Peer motivational climate**

The importance of peers in the PE climate has been identified throughout Study 3a. Quite often in the literature teachers have been investigated as the key social agent to influence student’s basic psychological needs and subsequent motivation in PE. However, peers may have an equally, if not more significant role in supporting a students’ needs. Based on the eleven dimensions identified in the Peer Motivational Climate Questionnaire (Vazou et al, 2005), we sought to identify these dimensions in the student’s interview responses. The dimensions identified consequently formed the higher order themes; peer relatedness support and intra-class conflict.

**Peer relatedness support**

The value of feeling like you belong to a group and feel connected to others is crucial in fostering motivation (Deci & Ryan, 2000). To date, there has been limited research that has explored students’ perceptions of peer relatedness support in PE, instead the focus of research has been on relatedness support from the teacher. Based on the interview data, the students mentioned ‘friends’ regularly when discussing their experiences of PE. The lower order themes that were identified were: a) importance of being with friends, b) enjoyment of playing with people you know, and c) lack of peer support in cross-country.

Student B described the effect being placed in a group away from friends can have. For example she said: “…and then I got divided from all my friends and I just got really upset.” Thus, careful decisions need to be made by teachers when grouping students due to negative affect. Furthermore, Student A explained playing with students she knows adds to the enjoyment of an activity (e.g. badminton):

> You get to know other people and you get to play with other people you know because you have to play with another person otherwise you don’t have a game.

Students often preferred activities such as badminton, perhaps due to the increase in sociability compared to individual sports such as cross-country. In comparison, Student
A explained she felt isolated in cross-country as she could not really talk to anyone whilst she was running. She also stated:

Yeah and you feel like you haven’t really got anyone there to support you, so if you fall over or something people are just going to run pass.

Not feeling like you have peer support may provoke feelings of anxiety prior to the activity and as a result the individual may become withdrawn from the lesson.

**Intra-class conflict**

This dimension involves the display of negative and unsupportive behaviours from other students in the class. For example, making unkind criticisms, laughing at classmates, putting others down and complaining about losing after competitive games. Hence, the lower order theme established was; negative behaviour. Negativity from classmates featured extensively in student discussion and seemed to be more apparent in secondary school compared to primary school. The students were especially concerned with being evaluated by their classmates. Student B stated:

…nobody wants to be the last one running, cause everyone is going to look at you and go, “oh my god they are really slow”.

Student C also commented:

Well in PE there is some girls and they are really distracting and they are just in the corner like giggling or like being excluded and whispering and they’re just like being like…whispering then looking at someone, making it obvious that they’re looking at them, and then turning to someone else and its just like, and then when they look at you you’re just like “are you talking about me” and they’re like “no, no, no” but then you’re like “its pretty obvious you are”.

**Motivational Climate**

Ames (1992) proposed the existence of two motivational climates. A task-involving motivational climate (mastery), and an ego-involving motivational climate (performance). In a task-involving climate, the teacher would focus on improvement of skill and encourage effort, whereas in an ego-involving climate the teacher would focus on intra-team competition, indirectly fostering normative ability and social comparison among students. Often the two climates co-exist within one PE lesson. For example, it is not unusual for teachers to plan a task-oriented activity at the start of the lesson, by teaching students particular skills through isolated drills. An ego-oriented activity would then tend to follow by asking students to execute the skill within a game situation. Alternatively, some PE lessons may solely be either task or ego-oriented.
Thus, in the current study task and ego-oriented climates derived the higher order themes.

**Ego-oriented climate**

In discussions with students, suggestions were made towards the Games lessons being highly ego-oriented with the focus of lessons being on competition and team selection. However, students made no reference to PE lessons when discussing the issues surrounding a vastly competitive environment. The biggest concern for most of the students was the lack of attention they received from the teacher due to teachers focusing primarily on the more able players in order to select the best teams. Student B said:

> …cause there is only like three or four C/D matches in a year so there probably going to be like “oh it doesn’t matter, they’ve got a match next week and they’ll focus on them, and it’s great if your in the A team cause then you get fun and they were doing it to music and stuff, and there’s us in the background just looking at them.

Student B has supported the theoretical assumption that ego-oriented climates may foster social comparison. Student B has described an inner desire to be as good as the more able students, and instead of joining those students, she has to painfully endure observing them from a distance. Not only can social comparisons cultivate an increase in deficiency in ability and effort beliefs, but perceptions of teacher need support may decrease due to feeling ‘second best’ compared to the higher ability students.

**Task-oriented climate**

To support the assumption that the PE teachers in the present study focused more on performance and competition in Games lessons, students suggested the existence of a low task-oriented climate. Minimal attention from the teacher was given to the less able students when they were practicing skill-based tasks. For example, Student B said:

> I look over at her she is like always on her phone texting like phoning somebody and I’m kind of thinking like maybe she’s let us do this because its not important but that’s kind of a bit too often.

If the teacher is failing to support and encourage effort on a task then students may begin to devalue the activity and lack the drive and persistence to continue.

**Summary and Conclusions**

During the first phase of this study, students discussed their experiences of PE in primary school. At the start of the interview, two out of the four students self
reported high amotivation scores on the AI-PE and the remaining students reported scores below the mid-point signifying low amotivation. Nonetheless, all students were identified by their PE teacher as being the least motivated in the class due to displaying typical maladaptive behaviours such as forgetting PE kit, being sedentary in lessons and giving up on tasks easily. All students made reference to the four amotivation dimensions when drawing upon their experiences of PE in primary school. Deficient ability beliefs were evident when students reported that they were unable to do an activity because they believed they were not good enough. Students consistently self evaluated their ability and their responses implied they perceived their ability to be a stable construct that may be difficult to change. Moreover, students compared their ability to their peers and would subsequently assess whether the students in the PE class were stronger and/or weaker than themselves. The results highlight that self-awareness of ability has developed by the end of primary school and children are already comparing themselves to others. Furthermore, students displayed deficient effort beliefs, particularly if they thought specific activities in PE were beyond their capabilities. Students commented on their dislike of the physiological changes their bodies endure through physical exercise. Such changes may be an underlying reason as to why some students may not believe they are able to sustain the effort that is required of them in certain activities. It is therefore important students are taught the effects of exercise in primary school so they know what to expect and how far to exert themselves in order to increase their fitness.

The types of activity and the perceived difficulty of the activity encompassed the amotivation dimension unappealing task characteristics and have been discussed by the current students as potentially influencing the appeal of the task. The type of activity also may predict the mood state of the individual and subsequent motivational behaviors, e.g. effort. For example, students commented that when the task was enjoyable they tried harder than those tasks they found unappealing. One may assume therefore that activities, in which students demonstrate low effort, may be activities they find the least enjoyable and perhaps boring. Boredom has been associated with amotivation in past research (Ntoumanis et al; 2004). Furthermore, the results showed a potential link between low task enjoyment and high task difficulty. In other words, students who perceive the task to be difficult will show lack of enjoyment for the task. Students often commented on cross-country as being extremely challenging and consistently discussed throughout the interview their dislike for the activity. Teachers
should therefore be aware that some activities in the PE curriculum may be extremely
difficult and demanding for some students. Teachers as a result have a responsibility to
create exciting and positive learning environments that encourage students to succeed.
Most of all, teachers should be planning lessons that are fun for all students by
differentiating activities.

In the present study, the amotivation dimension insufficient task values did not
feature in students’ discussions. All students understood the importance of PE and
valued the subject. It is important to note that students may still be amotivated in PE
even though they value the reasons for having to do PE in school.

Physical self-concept (PSC) was also a significant feature in all students’
responses. By age 10, girls are already extremely self-aware of their body image as well
as being aware of what their physical structure enables them to do in PE. The results
implied that low PSC might be associated with deficient ability beliefs. For example,
one student in the present study described not ‘being the right person’ for gymnastics
due to not being flexible. She also described not being ‘built’ for gymnastics, and
consequently thought she was not very able. It is theorised that PSC is a general stable
construct (Marsh, 1994) and therefore low PSC may be experienced across all activities
in the PE curriculum, not just gymnastics. Teachers need to try and distinguish those
students who may have low PSC in the class, and recognise the potential influence low
PSC may have on their ability beliefs.

According to the results, the support of the teacher within the PE lesson has so
far been deemed as being essential in decreasing deficient ability and effort beliefs,
unappealing task characteristics and increasing PSC. Research has also shown teachers
can increase amotivation by supporting students’ three basic psychological needs for
autonomy, competence and relatedness (Shen, 2010b; Study 2). In the present study,
students perceived their PE teachers to provide inadequate relatedness and competence
support, but perceptions of autonomy support were not mentioned. First, students
expressed receiving insufficient attention from the teachers in lessons and not feeling
the teachers showed empathy towards their problems. Second, students also described
the lack of feedback and encouragement they received in lessons, especially when they
found particular tasks difficult. This may be due to some of the PE teachers in primary
school not being specialists and are therefore unable to provide extensive feedback to
help students improve.
The final theme to be derived from the student interviews was the peer motivational climate. The higher order themes identified were intra-class ability, intra-class conflict and peer relatedness support. Comparisons of ability between peers were evident when students described how they compared themselves to others’ strengths and weaknesses, in particular the more able students. Continual comparison may lead to students consistently trying to outperform their peers in a somewhat ego-involved climate. Moreover, negative behaviours from students’ peers regularly featured in discussions and represented the peer motivational climate dimension: intra-class conflict. The students in this study described the unkind comments that were often communicated within and between teams of mixed ability. Putting students down, laughing at others weaknesses and being frustrated with the less able were all examples of negative interactions between students. However, more research is needed to understand the potential consequences of intra-class conflict on student amotivation.

Peer relatedness support was also expressed as being important to students in primary school and may aid enjoyment of the activity. Feeling a sense of belonging in a team helped students to feel connected to the group and enhanced their experiences of PE lessons.

The current study also explored students’ expectations of PE in secondary school. First, the results showed that students were excited about having more activities to choose from in secondary school and were looking forward to trying new sports. In light of this finding it seems the activity or task has to be appealing to students in order to capture their interest. Second, the students expressed their concerns with their classmates, as well as older students, being more able than themselves and their desire to be like them. Thus, anxieties about others’ ability in the PE class were mounting within students across the transition. Subsequently, students may approach their first PE lesson in secondary school with trepidation and be comparing themselves to others from the offset. Understanding and nurturing these anxieties among first year secondary students is vital for enhancing self-determination in PE. Third, students perceived autonomy support to be low in secondary school by reporting their concerns with PE lessons being more controlling, due to being ‘forced’ to work harder in the activities. Some students also noted the importance of teachers’ informative feedback on tasks and commented on their frustrations with the depleted feedback they received in primary school. Students therefore may expect more technical feedback from secondary school teachers, perhaps due to teachers being more specialist. Thus,
perceptions of competence support may be a crucial predictor of amotivated behaviours in PE as student’s transition through the school. Finally, peer relatedness support was significant during student’s discussions about their expectations of PE. Having the support from friends and playing in teams with familiar others provides a sense of belonging and comfort, and may be essential in helping ease the anxieties students face whilst adapting to a new environment.

The second phase of this study aimed to track the amotivated students into Year 7 to gain an understanding as to whether their expectations of PE discussed during the first interview were realistic. We were also interested to explore the student’s experiences of PE during the first two terms of secondary school and whether the amotivation dimensions continued to be identified post transition together with the potential causes of the amotivation subtypes. In the previous interview, the students described some of their expectations of PE in secondary school, for example, they perceived the PE teachers would make them work harder in lessons. In addition, one student explained how she would be comparing her ability to the older girls and would want to “be like them”. Hence, the students are commencing secondary school with preconceived views and anxieties about PE. Despite some anxiety, students were excited about having more opportunities to try new activities and clubs, perhaps to explore their abilities in other sports besides hockey, netball and rounders. Furthermore, it was important for the students that the PE teachers provide informative feedback when performing a skill, feedback they perhaps did not receive in primary school. Lastly, feeling a sense of belonging in the class and having peer support was deemed a significant factor in fuelling a positive PE experience.

<table>
<thead>
<tr>
<th>Raw Data</th>
<th>Lower Order Themes</th>
<th>Higher Order Themes</th>
<th>General Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Well it’s I mean I am rubbish at tennis.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: I sort of get halfway through and realise I am not doing that great.</td>
<td></td>
<td>Self perception of ability</td>
<td>Deficient ability beliefs</td>
</tr>
<tr>
<td>B: I’ve never been in any sort of teams or anything because I’m not that sporty.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D: I sort of find myself comparing myself to the other people and thinking, well they’re good at it why aren’t I, you know and its always sort of hard.</td>
<td></td>
<td>Comparison to peers</td>
<td></td>
</tr>
<tr>
<td>B: I sort of get halfway through and realise that I am not doing that great so I just give up and think ‘oh well if I’m not doing brilliant, I’m not going to bother.</td>
<td></td>
<td>Effect of ability beliefs on effort</td>
<td>Deficient effort beliefs</td>
</tr>
<tr>
<td>B:...because if it’s like hockey, it’s like I’m never going to use hockey, but like netball, netball is useful for basketball.</td>
<td></td>
<td>Devaluing specific activities</td>
<td>Insufficient task values</td>
</tr>
<tr>
<td>D: It’s because I don’t have to get my hair wet. It really annoys me because it takes like forever to dry.</td>
<td></td>
<td>Personal concerns</td>
<td>Unappealing task characteristics</td>
</tr>
<tr>
<td>A: I’ve never really liked hockey, yeah it hurts my back and you need so much stuff like the hockey stick. Mine is too small so I have to get a new one, then I’ve got to find the time to get one, and then with like netball its like…PE kit, done, instead of like shin pads, mouth guards, hockey stick.”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D:...and you also need a whole new…it’s like a new sort of kit really because you have to get the astro shoes and things like that.”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A: It’s just the whole thought of just running.</td>
<td></td>
<td>Task specific</td>
<td></td>
</tr>
<tr>
<td>A: I think we should get badminton back, well because we did it at junior school, and rounders because um…I know people are probably going to disagree but I really hate cross-country.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B:...plus its hard running in grass and mud.</td>
<td></td>
<td>Task difficulty</td>
<td></td>
</tr>
<tr>
<td>B: there’s like branches which spray out from the trees and then everyone trips over them which is not very nice”.</td>
<td></td>
<td>Anxiety</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Raw Data</th>
<th>Lower Order Themes</th>
<th>Higher Order Themes</th>
<th>General Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Yeah it’s easier to…cause in the pool you can’t…the teacher is always trying to help you try, you know…swim but cause they can’t get…well, like get in and show you, it’s quite hard, you know they’re doing …so. In dance they can sort of help you.</td>
<td>Importance of demonstration</td>
<td>Perceptions of competence support</td>
<td>Perceptions of teacher need support</td>
</tr>
<tr>
<td>B: I feel like I am not being pushed, and I want to be pushed.</td>
<td>Not feeling they are improving</td>
<td>Low perceived competence support</td>
<td></td>
</tr>
</tbody>
</table>
| B: oh I am going to really prove myself this lesson, and I think I am going to be able to do really well and then I think, I sort of get half way through and I realise I am not doing that great so I just give up and think, “oh well if I’m not doing brilliant, I’m not going to bother”.
D: I think more feedback would be really good as well, cause in dance I am not very good and I’d like to get better but they don’t really ever say…they film it and then give it to you and say “watch this” and see what you could improve, but its not from another persons point of view it’s sort of just your own…yeah. | Insufficient feedback from the teacher | | |
| B:….when you watch the A team play it looks so much more fun because they’re taking it a lot more competitively and they play more game practices than we do and it just makes me feel a bit… | Less skill practice compared to more able | | |
| A: I think we should be able to like choose what sports we do. | Would like more choice | Perceptions of autonomy support | |
| B: I’m in the D team for netball and all the teachers always phone to say they get the A team so they get the proper practice and theirs us kind of like not…cause there is only like three or four C/D matches in a year so there probably going to be like “oh it doesn’t matter, they’ve got a match next week” and they’ll focus on them.
B: I know that when um.. we play netball and my teachers sort of like looking at her phone or looking the other way and I’m kind of playing my best I’m like “what, why aren’t you watching me.”
B: Because if she is not looking then you just stand there like, “I don’t have to do this, do I?” | Minimal attention from the teacher | Perceptions of relatedness support | |
<table>
<thead>
<tr>
<th>Raw Data</th>
<th>Lower Order Themes</th>
<th>Higher Order Themes</th>
<th>General Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A:….yeah like in gymnastics I’m just like mmmm, trying to hide myself.</td>
<td>Body image concerns</td>
<td>Low physical self-concept</td>
<td>Physical self-concept</td>
</tr>
</tbody>
</table>
| A: I think sometimes the um.. the sort of kit you have to wear can be really, it can sort of make you feel very uncomfortable and plus you have to wear these weird little cycling short things.  
D: They make you really chubby around the legs.                                              | Problems with PE kit       | Peer relatedness support | Peer motivational climate |
| B:…and then I got divided from all my friends and I just got really upset.                  | Importance of being with friends | Peer relatedness support | Peer motivational climate |
| D: You get to know other people and you get to play with other people you know…because you have to play with another person otherwise you don’t have a game.  
D: Yeah and you feel like you haven’t really got anyone there to support you, so if you fall over or something, people are just going to run pass.  
A: If you fall over or something, people are just going to run pass.  
D:….or laugh at you.  
B: Nobody wants to be the last one running, cause everyone is going to look at you and go, “oh my god they are really slow”.  
B: I knew this boy, when he was running he um…he tripped over his laces and fell in mud and everyone just kind of liked dodged him as they went passed.  
B: Because its sort of like they’re talking about you like you didn’t come last and you didn’t come first so they’re just talking. Like last year…um, X stayed behind with me because I pulled like all my leg muscle but I still had to do it and she stayed with me the whole time, and like everyone else was like looking back on us and we’re just like “oh well, we’re still doing it”, also like X said its um…the competitive atmosphere, and like people who are in different houses are like to their friends “oh yeah we are so going to win against you, your house like sucks” and everything.  
D: Yeah and sometimes they mean it in a sort of jokey way but they can actually be a bit | Negative behaviour from peers | Intra-class conflict       |
A: Yeah I think it’s because you’re not being seen and they are kind of focusing on who would be right for the teams.
B: They do one hockey session and they have different sorts of activities to do, you show what you can do obviously, and then for netball they do the same thing and then they say right these will be good for this team and these for this team and I did awfully in the hockey one. I kept on tripping over everything and I went home and I was like “mum, I don’t think I’m going to be in the team”.
B: …cause there is only like three or four C/D matches in a year so they’re probably going to be like “oh it doesn’t matter, they’ve got a match next week”, and they’ll focus on them… and its great if you’re in the A team because then you get fun and they were doing it to music and stuff and there’s us in the background just looking at them.
D: They do loads of different varieties of clubs but not actually taking them seriously.
B: I look over at her, she is like always on her phone texting like phoning somebody and I’m kind of thinking like maybe she’s let us do this because it’s not important but that’s kind of a bit too often.
Chapter VII

Study 4

Changes in amotivation across different activities in physical education: a longitudinal perspective
Introduction to Chapter VII

The findings in Study 3a and 3b highlighted additional situational factors that may affect amotivated behaviours in PE and reinforced that the PE context is a complex environment in which there are a number of possible antecedents of amotivation. There are very few qualitative studies that have explored amotivation in PE, but those that have been conducted (Ntoumanis et al, 2004; Study 3a; Study 3b) have provided us with enriched knowledge from students to further aid our understanding of amotivation. It is clear from the research that common reasons for an absence of motivation are the activities taught, often being perceived by students as ‘boring’ and ‘uninteresting’, and in a recent research project across the UK, it was found that 46% of the least active girls agreed that they disliked the activities provided in PE (Woman’s Sport and Fitness Foundation, 2012). Additionally, the findings in Study 3a and 3b emphasised the influential role individuals’ peers may have in determining maladaptive behaviours such as low effort and ability beliefs. Therefore, the relationship between peer motivational climate and the amotivation dimensions were explored further in the present study and is the first piece of research to investigate the relationship between these two variables. The predictive utility of student’s perceptions of need support and amotivation were also assessed, as well as physical self-concept, to examine if the findings in Study 1 were replicable. Student effort and attainment grades were chosen as outcome variables as these were considered to be two important outcomes for teachers and researchers to understand and be able to objectively identify students who are displaying signs of amotivation.
Abstract

The purpose of the present study was to examine changes in the four amotivation dimensions across a number of different activities over a school year in physical education (PE), and to explore socio-contextual variables such as students’ perceptions of teachers’ psychological need support, peer motivational climate and physical self-concept that may be potential predictors of change. In addition, outcome variables such as student effort and attainment were also measured. A longitudinal design was conducted over six consecutive units of work in a school academic year. Each unit of work consisted of one of the following activities; gymnastics, netball, dance, swimming, tennis and athletics. A total of 61 female physical education students (Mean age = 11.5 years, SD = 0.86) from an independent secondary school in South-East England took part in the research by completing a questionnaire in their PE lesson at the end of every six week unit of work. One way repeated measures ANOVAs identified students feeling more deficient in their ability and effort beliefs and valued the task less in gymnastics compared to the other activities. Multilevel modelling analyses showed significant interrelationships among the amotivation dimensions. All three types of perceived need support negatively predicted deficiency in effort beliefs and unappealing task characteristics at the start of the study and over time, perceived autonomy need support negatively predicted change in deficiency ability beliefs and insufficient task values, and perceived competence need support negatively predicted change in insufficient task values and unappealing task characteristics. Significant relationships were also found between the peer motivational climate dimensions and the four amotivation dimensions. Overall, the findings highlight the importance of teacher need support and peer motivational climate to forestall amotivation in PE.

Keywords: Amotivation, perceptions of teacher need support, peer motivational climate
Introduction

In UK schools, students are taught a varied PE curriculum which aims to teach children a broad range of skills both independently and in competitive situations. Schools are required to teach invasion games, striking and fielding games, dance, swimming and athletics whilst encouraging children to increase their physical activity and lead healthy lifestyles. Not all children are going to enjoy the activities that a school offers, and it is unrealistic to expect all children to enjoy all the activities. Teachers therefore have a difficult task of enthusing those students who are perhaps less interested in a particular activity. The interesting question to be asked is: does student’s amotivation change across different activities? Study 3b helped to shed some light on the latter question, as amotivated students were interviewed at the beginning and end of their first year of primary school, and findings showed the characteristics of the task played a key role in their ability and effort beliefs. To date, the majority of quantitative research investigating amotivation has been in one activity (Perlman, 2010; Shen et al; 2010a; 2010b; Study 2). This leaves physical education teachers and researchers with a lack of understanding and knowledge regarding amotivation in the PE setting, perhaps due to the number of different activities that are offered. The present study, therefore, sought to examine changes in the four amotivation dimensions across a number of different activities in physical education and potential predictors of change over the first academic year of secondary school (Year 7). We chose this age range (11-12yrs) because research has shown a decline in physical activity and motivation around the age of 12-13 yrs (Digelidis & Papaioannou, 1999; Sallis et al, 2000). Moreover, Study 3a and 3b explored the expectations that amotivated pupils in year 6 had towards PE in the secondary school. Findings from the qualitative analysis of these interviews led the present study to conduct further research on additional socio-contextual variables; specifically peer motivational climate was identified as an important variable that may affect the four amotivation dimensions.

Peer motivational climate

It is important not to neglect the potential influence of peers in PE as a possible antecedent of the amotivation dimensions. Participation motivation research has indicated clearly that peers are a particularly important significant other during early adolescence (Smith, 1999), and in a child’s’ motivation (Brustad, Babkes, & Smith, 2001). Therefore, peer influence should be considered as an extremely important variable when pursuing our understanding of amotivation. Peers have been associated with changes in
competence and affective states. For example, Horn and Amarose (1998) suggested that in sport, children’s preferred source of competence was peer comparison, and such evaluations were particularly salient between the ages of 10-15 years old. The findings from Study 3b support this suggestion, as it was found upon starting secondary school, students would compare their ability to others in the class and assess others’ strengths and weaknesses. Peers can also contribute to enjoyment (Duncan, 1993), which again can be supported from the findings in study 3b. Students reported the importance of feeling supported by their peers when they were encouraged in team sports, and being affiliated to a team increased levels of enjoyment.

Findings from past research investigating peer relationships and physical activity participation indicate that perceptions of friendships and being accepted by one’s peers in the sport domain, influence physical self-worth and affective states such as enjoyment (Smith, 1999). Smith found that higher perceptions of peer acceptance were related to higher physical self-worth. Therefore, peers may have an impact on children’s motivational processes, physical self-concept and subsequent involvement in physical activities. If feeling accepted by one’s peers can in fact enhance physical self worth and possibly physical self-concept, peers alone may significantly contribute to students’ deficiency in ability beliefs in PE.

The theoretical framework of achievement goal theory (AGT) provides an understanding of how peers may influence children’s motivation. According to this theory (Ames, 1992; Duda & Hall, 2001; Nicholls, 1989), individuals strive to demonstrate ability, and look to avoid demonstrating incompetence in achievement contexts. Thus, individuals endorse two different ways in which to judge their successes or failures. Nicholls (1989) proposed the existence of two goal involvement states as a way of judging individual competence. The first goal orientation is termed task orientation and is evident when perceptions of competence are self-referenced and based on self-improvement, or investing maximum effort on improving a skill. The second goal orientation is termed ego orientation and is evident when perceptions of competence are defined in a normative fashion. One would determine success by aiming to outperform others through demonstration of superior ability and winning with less effort (Nicholls, 1989). Research to date on AGT has collectively found individuals who are task-orientated will have more positive outcomes in the physical domain than ego-oriented individuals (Duda & Hall, 2001; Duda & Ntoumanis, 2005).
The motivational climate in which children are exposed to may encourage the development of task and ego goal orientations and subsequently induce a goal involvement state in lessons (Ames, 1992). The two types of motivational climate that have been identified in the literature are task involved/mastery climate or ego involved/performance climate. A mastery climate encourages effort and individual improvement of skills whereas a performance climate cultivates an atmosphere of social comparison and normative judgements. In a performance climate, the emphasis may be on intra-team ability/competition and interpersonal comparison. The findings in Study 3b highlighted the existence of a performance climate as students consistently reported comparing their ability to others in the class, particularly during team games and in Study 3a, the primary students often reported other members of the class taking the opportunity in games to outperform others and demonstrate their superior ability. It can be expected that both climates co-exist during a PE lesson, whereby students are taught skills independently or in pairs, whereby they are solely focusing on self-improvement (mastery climate), and then students are required to apply the skill into competitive situations (performance climate). Although competition is very much encouraged in the PE curriculum (NCPE, 2013), PE teachers need to be aware of the potential implications performance climates can have on students’ achievement goals.

Peer motivational climates have, therefore, started to be explored to investigate psychological variables such as motivation and perceived physical competence. Vazou, Ntoumanis and Duda (2005) conducted a qualitative study on 12 to 16 year old athletes who participated in individual and team sports. Analysis revealed eleven dimensions of the perceived peer motivational climate: co-operation, effort, improvement, mistakes, intra-team competition, intra-team conflict, equal treatment, normative ability, autonomy support, evaluation of competence and relatedness support. The work by Vazou et al led to the development of an instrument to measure peer motivational climate within motivational research (Ntoumanis & Vazou, 2005). Ntoumanis and Vazou assessed a number of adolescent athletes in a range of sports and formulated five key features of the peer motivational climate and categorised them into task-involving and ego-involving. The task-involving features were improvement, relatedness support and effort, whereas the ego-involving features were intra-class competition/ability and intra-class conflict. Improvement involves students co-operating with each other and helping each other to improve their skills, perhaps observed in PE through peer teaching, evaluation and feedback. Relatedness support pertains to students feeling accepted in the group and/or
class and feeling their opinions are valued and listened to by others and effort involves the encouragement a student receives from the group to continue trying, even after making a mistake, and reinforcing persistence on tasks. The ego-involving feature of intra-class competition/ability displays a climate of normative ability, capturing those students who are trying to outperform others during team competition and an environment that favours the more able student. Lastly, intra-class conflict displays unsupportive behaviours from peers such as negative comments made to others, criticism and laughing at others’ mistakes. Although the qualitative study by Vazou, Ntoumanis and Duda (2005) was conducted on young athletes who were actively involved in sport, the newly formed peer motivational climate, and research on the importance of peers in motivation (Pintrich et al, 2003) and the psychological functioning of young athletes (Smith, 2003, 2007) could help contribute to our understanding of motivational processes in PE settings, in particular why some students’ motivation may deteriorate or lack existence. Thus, based on the existing research and the qualitative findings in study 3a and 3b, the present study aimed to explore peer motivational climate as a potential predictor of amotivation in PE. We first aimed to investigate differences in amotivation scores across a number of activities over a school year, and then investigate PSC, perceptions of psychological need support and peer motivational climate as potential predictors of change. This is a unique study as no research to date has either conducted a longitudinal study on the multidimensionality of amotivation in PE over a whole school year, or explored the peer motivational climate as a potential predictor of amotivation.

Based on prior studies (Study 3a and 3b) the following hypotheses were proposed: 1) Deficient ability beliefs and deficient effort beliefs would positively predict insufficient task values and unappealing task characteristics but not vice versa; 2) an increase in students’ perceptions of psychological need support will predict a decrease in all four amotivation dimensions over a school year and an increase in student effort and attainment grades; 3) an increase in perceived peer improvement, peer relatedness, peer effort will negatively predict changes in the amotivation dimensions over time and positively predict an increase in student effort and attainment grades, whereas an increase in perceived intra-class ability and intra-class conflict will positively predict changes in the amotivation dimensions over time and predict a decrease in student effort and attainment grades; 4) an increase in PSC will predict a decrease in the amotivation dimensions over time.
Method

Participants

The sample consisted of 61 female students (mean age 11.5 years, SD = 0.86) from four PE classes in an independent girls’ school in south-east England. All classes had the same PE teacher throughout all the activities taught in one school year, with two classes sharing the same teacher at different times. All teachers were female and ranged in age from 26 years to 60 years old. The teachers have differing amounts of experience, ranging from two years to thirty-five years. All students had one PE lesson and two games lessons of 50-minute duration once per week. In the present study, data were collected only in the participants PE lesson so that students’ responses to the questionnaire were consistently based on their PE teacher as opposed to their games teacher.

Procedures

Before commencing this study, approval was gained from the university ethics committee, the head teacher and the Director of Sport at the school. Parental permission was then sought, giving parents the opportunity to opt their daughter out of the study. No parent chose this option. A meeting was then held with three PE teachers who taught PE to the four Year 7 PE classes chosen to take part in the study (one of the teachers taught two classes). The aim of this meeting was for the researcher to brief the teachers on the format of the questionnaire and to go through the procedure for data collection in their lessons. This meeting was also an opportunity to explain the assessment procedure and the ‘teacher ratings of student effort’ questionnaire so that all attainment grades were standardised.

Following the preliminary meeting, a self-report questionnaire measuring amotivation, peer motivational climate, perceptions of teacher need support and PSC, was administered to all students in Year 7 at the end of every 5-week unit of work until the end of the summer term, therefore measuring variables across six different activities (gymnastics, dance, netball, swimming, tennis and athletics). Participants were given a ‘willingness to participate’ form and an information sheet, detailing the aim of the project. All participants were told they had the right to withdraw at any point during the study and their responses would remain anonymous and not seen by their families. In addition, teachers were asked to assess each student at the end of the unit for each activity using a standardised assessment criteria sheet specific to each activity (pupils were informed of this). The assessment criteria constructed by the researcher were based on the
National Curriculum Level descriptors\(^3\) and the independent grading system currently used within the school. The teacher also graded students on student effort at the end of each unit of work.

**Measures**

*Amotivation.* The Academic Amotivation Inventory in Physical Education (AI-PE) (Shen et al, 2010a) was used to assess student’s amotivation. The AI-PE consists of 16 items measuring the four dimensions of amotivation: Deficient ability beliefs (e.g. ‘I don’t have what it takes to do well in [PE activity]’); Deficient effort beliefs (e.g. ‘I’m not energetic enough’); Unappealing characteristics of the task (e.g. ‘My [PE activity] lessons are not stimulating’); and Insufficient task values (e.g. ‘[PE activity] is not valuable to me’). Students were firstly instructed to state on a Likert-scale (1 = Never to 7 = always) ‘how often do you feel a lack of motivation to do [PE activity]’. They were then asked to rate on a Likert-scale from 1-7 (1 = does not correspond at all to 7 = corresponds exactly) each statement that corresponded with their reasons for not wanting to do PE.

*Student perceptions of teacher need support:* Students’ perceptions of autonomy support were measured using a PE modified version of the Learning Climate Questionnaire (LCQ) adapted by Standage et al, (2005). In the present study, four items were extracted from the 15-item LCQ to measure autonomy need support. To measure competence need support and relatedness need support, four items for each variable were adapted from the questionnaire devised by Standage and colleagues (2005). Students were asked to rate on a Likert scale (1 = Not at all true: 7 = Very true) how true each statement was in relation to the PE class they had just participated in and the PE teacher who taught them. Each item was preceded by the stem, “In this PE class…” There were 12 items overall measuring support for three needs; autonomy support (e.g. ‘I feel the PE teacher provided us with choices and options’); competence support (e.g. ‘I feel the PE teacher helped me to improve’) and relatedness support (e.g. ‘The PE teacher supported us’). Mean scores were then calculated at each time point. Evidence for the reliability and validity of the LCQ and the competence and relatedness support items were supported by Standage et al. (2005).

*Physical self-concept:* Six items were taken from the ‘global physical’ scale of the original ‘Physical Self Description Questionnaire’ (PSDQ) (Marsh, 1994). Participants reported on a 6-point Likert-scale ranging from 1-6 (1 = not at all true: 6 =

---

\(^3\) The National Curriculum level descriptors were removed from the PE curriculum in September 2014 to provide teachers with more flexibility in the way they assess students (Department of Education, 2014)
very true). Example items were ‘Physically I am happy with myself’ and ‘Physically I feel good about myself’. Evidence for the reliability and validity of the PSDQ has been provided by Marsh (1994).

**Peer Motivational Climate:** An adapted version of the Peer Motivational Climate in Youth Sport Questionnaire was used (Ntoumanis & Vazou, 2005) to measure five key areas of peer motivational climate. There were 20 items overall measuring *improvement, relatedness support, effort, intra-class ability, and intra-class conflict*. Students were asked to rate on a Likert-Scale ranging from 1-7 (1 = strongly disagree: 7 = strongly agree and each item was preceded by the stem… ‘In this PE class, most pupils...’.

**Student effort:** Teachers were asked at the end of each unit of work to rate each student on a five-point scale (Standage, Duda, & Ntoumanis, 2006) their levels of motivated behaviour (effort) from strongly disagree (1) to strongly agree (5). For example, ‘Gave up easily on tasks that were difficult or challenging’ and ‘Often made the effort to learn how to perform skills’.

**Effort Grade:** In line with the school assessment policy, teachers were also required to award each student an effort grade at the end of a unit of work using the schools’ effort grading system, therefore all teachers were familiar with the method. Teachers rated each student’s effort on a scale from 1-5 (1= outstanding effort: 5 = poor effort).

**Attainment:** Teachers awarded each student an attainment grade using the schools grading system on a scale from 1-5 (1 = outstanding performance: 5= poor performance). In order to try and standardise teachers’ assessment grade across the four classes, teachers were given descriptors of each grade specific to every activity and were asked to read the descriptors before giving students their grades at the end of the unit.

**Data Analysis**

In the preliminary analyses, negatively worded items on the teachers’ rating scale of students’ effort were recoded in SPSS so a total effort score could be calculated for this scale. High scores indicate high effort ratings (maximum 5) and low scores (minimum 1) indicate low effort ratings. Attainment grades and effort grades were also recoded to coincide with the teacher rating scale of effort. Again, high scores indicate high attainment and effort (maximum 5) and low scores indicate low attainment and effort (minimum 1). The overall means, standard deviations and internal reliability coefficients (Cronbach alpha) were then calculated for all variables in the present study. To explore the relationships between the amotivation dimensions and the other variables,
we analysed the correlations among the amotivation dimensions, perception of need support, PSC, peer motivational climate, teacher ratings of student effort, effort grade and attainment grade across the six different activities (time points). Next, a series of repeated measures ANOVAs were first conducted to compare mean scores on the amotivated dimensions across the six different activities irrespective of when the activities were taught in the school year. Pair-wise comparisons were identified to explore if there were any significant differences between the mean amotivation scores among the six activities. Such analyses would identify specific activities that may be influencing the four amotivation subtypes, providing teachers with a greater insight into the proposed influence the type of activity may have on students’ amotivation. For the main analyses we employed multilevel modelling using MLwiN software (version 2.23; Rasbach, Steele, Browne, & Goldstein, 2009) to determine whether change in amotivation varied within and between students due to the influence of theory based predictors (perception of teacher need support, physical self-concept and peer motivational climate). Multilevel regression modelling was used due to the hierarchical structure of the data. For example, measurement occasions (time) were nested within students. Overall there were six time points. Therefore, time (level 1) is nested within each student (level 2). Multilevel regression modelling also accounts for missing data as it does not assume an equal number of measurement occasions for all students. Moreover, multilevel modelling is a useful analysis for longitudinal data in which there are a number of measurements taken from individual students (Ntoumanis, 2014). First, unconditional means models were explored to obtain the intraclass correlations of all study variables. In other words we were interested to find out the proportion of variance in variables between and within students. Unconditional means models were intercept only models (i.e. no predictor variables were included). Second, unconditional growth models were then tested to examine the average patterns of change across the six time points for each variable. A ‘time’ variable (with six measurements) was entered into the model as the only predictor and was centered at initial status (time 1). This was the case for all subsequent models so that the intercepts of the conditional growth models could be interpreted as the students’ measurement of the dependent variables at time 1. To address whether changes in amotivation dimensions could be predicted by change in the other study variables a series of conditional growth models were conducted. The models tested the fixed effects of the predictors for each dependent variable at the start of the study and over the six time points and all predictor variables were grand-mean centered. The interaction effects
between time and each of the predictors were included in each multi-level model. It was assumed that if the interaction effects were not significant then relationships between the mean scores of the predictors and outcome variables at time 1 (initial status) remained constant (see Taylor et al; 2010 for an example). In other words, no significant changes would have occurred over the six time points.

Results
Descriptive statistics, reliabilities and correlations

Table 7.1 reports the means, standard deviations and internal reliabilities for all study variables across the six different activities (gymnastics, netball, dance, swimming, tennis and athletics) and the school year. The mean scores for the amotivation dimensions were all below the midpoint (3.5), which signifies a low amotivated sample. On closer inspection of the mean amotivation scores, deficient ability beliefs, deficient effort beliefs and insufficient task value had the highest mean score in gymnastics compared to the other activities. Swimming had the highest mean score for unappealing task characteristics followed by dance. Overall, the mean scores for perceptions of autonomy, competence and relatedness support were all above the midpoint (3.5) suggesting the sample felt their three psychological needs were being supported in all of the activities. However, perceptions of autonomy need support had the lowest overall mean score in all of the activities, but was particularly low in athletics and dance alongside perceptions of competence and relatedness need support. Interestingly, although overall PSC was moderately high amongst the sample, dance and swimming were the two activities whereby students’ PSC was lower. Reliability coefficients were acceptable for all variables.

Correlations were also examined among all variables in each of the different activities (see Tables 7.2 to 7.7). These analyses across the different activities revealed significant relationships between the amotivation dimensions and perceptions of need support in all the activities apart from gymnastics (only unappealing task characteristics was negatively correlated with autonomy need support) and dance (no significant correlations were found between insufficient task values and autonomy need support). Deficient ability beliefs negatively correlated with attainment grades in all the activities. Deficient effort beliefs and insufficient task value negatively correlated with teacher ratings of student effort in all the activities apart from dance and gymnastics and swimming and gymnastics respectively. Finally, all four amotivation dimensions were
inversely correlated with peer improvement, peer relatedness and peer effort in athletics and tennis.

**One-way repeated measures ANOVAs**

A series of one way repeated measures ANOVAs was conducted to compare mean scores on the amotivation dimensions across the six different activities. The results showed that there was a significant effect in the means scores for deficient in ability beliefs (Wilks’ Lamda = .60, F(5, 53) = 7.03, p < .0005, partial eta squared = .40) deficient effort beliefs (Wilks’ Lamda = .80, F(5, 54) = 2.78, p < .05, partial eta squared = .21) and insufficient task values (Wilks’ Lamda = .71, F(5, 54) = 4.52, p < .005, partial eta squared = .30) but no significant effect was found in the mean scores for unappealing task characteristics (Wilks’ Lamda = .88, F(5, 54) = 1.52, p > .05, partial eta squared = .12). Post hoc Tukey tests were carried out to identify significant differences between possible pairs of amotivation scores in each of the activities. Results showed significant differences in mean scores for insufficient task values between gymnastics and netball and netball and athletics. Significant differences in deficient ability belief means were found between gymnastics and every other activity apart from athletics and between netball and athletics. Mean scores for deficient effort beliefs were significantly different between gymnastics and netball but no significant differences between the mean scores for unappealing task characteristics were found across the activities.

**Multilevel modelling analyses**

**Unconditional means models.** Unconditional means models were calculated for each variable under investigation. Intra-class correlation coefficients (ICCs) between-students ranged from .19 to .65. Within person variation in the intercepts ranged from .35 to .90, which displays sufficient values worth exploring (Singer & Willett, 2003).

**Unconditional growth models.** We also tested a series of unconditional growth models to explore the average rates of change between the variables. Time served as the only predictor in the models. The slope for time was non significant for the amotivation dimensions indicating no significant rates of change in the amotivation dimensions over the school year. In contrast, the slope was significant for perceptions of autonomy (β = -.11), competence (β = -.12) and relatedness (β = -.15) and teacher ratings of student effort indicating a decrease over time. No significant temporal changes were observed in PSC, the peer motivational climate dimensions, effort grade or attainment grade. The slope coefficients were fixed to represent average change across the whole sample.
Table 7.1

Means and standard deviations for the amotivation dimensions, perceptions of autonomy, competence and relatedness NS, Total need support, PSC, peer motivational climate dimensions, teacher ratings of student effort, effort grade and attainment grade in different activities over a school year.

<table>
<thead>
<tr>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
<th>Time 4</th>
<th>Time 5</th>
<th>Time 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gymnastics</td>
<td>Netball</td>
<td>Gymnastics</td>
<td>Netball</td>
<td>Dance</td>
<td>Swimming</td>
</tr>
<tr>
<td>(T1, T2)</td>
<td>(T3, T2)</td>
<td>(T1, T2)</td>
<td>(T3, T2)</td>
<td>(T1, T2)</td>
<td>(T3, T2)</td>
</tr>
<tr>
<td>Group 1+3</td>
<td>Group 2+4</td>
<td>Group 1+3</td>
<td>Group 2+4</td>
<td>Group 1+3</td>
<td>Group 2+4</td>
</tr>
<tr>
<td>(n = 31)</td>
<td>(n = 30)</td>
<td>(n = 31)</td>
<td>(n = 31)</td>
<td>(n = 31)</td>
<td>(n = 31)</td>
</tr>
<tr>
<td>AB = ability beliefs; EB = effort beliefs; TV = task value; TC = task characteristics; NS = need support; PSC = physical self-concept; TEffort = Teacher effort; T1 = Teacher 1; T2 = Teacher 2; T3 = Teacher 3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 7.2
Correlations Among Amotivation Dimensions, Perceptions of Psychological Need Support, PSC, Peer Motivational Climate, Student Effort and Attainment in Gymnastics.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Def AB</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Def EB</td>
<td>.60**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Insuff TV</td>
<td>.62**</td>
<td>.56**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unapp TC</td>
<td>.44**</td>
<td>.51**</td>
<td>.77**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Autonomy NS</td>
<td>.01</td>
<td>-.06</td>
<td>-.08</td>
<td>-.25*</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Relatedness NS</td>
<td>-.07</td>
<td>-.01</td>
<td>-.07</td>
<td>-.18</td>
<td>.81**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Competence NS</td>
<td>-.19</td>
<td>-.01</td>
<td>-.05</td>
<td>-.04</td>
<td>.70**</td>
<td>.83**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Total NS</td>
<td>-.09</td>
<td>-.03</td>
<td>-.07</td>
<td>-.17</td>
<td>.92**</td>
<td>.95**</td>
<td>.91**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PSC</td>
<td>-.30*</td>
<td>-.17</td>
<td>-.21</td>
<td>-.09</td>
<td>.11</td>
<td>.10</td>
<td>.21</td>
<td>.15</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Peer improve</td>
<td>.49**</td>
<td>-.20</td>
<td>-.28*</td>
<td>-.20</td>
<td>.27*</td>
<td>.24</td>
<td>.28*</td>
<td>.29*</td>
<td>.28*</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Peer relatedness</td>
<td>-.32*</td>
<td>-.35**</td>
<td>-.43**</td>
<td>-.34**</td>
<td>.27*</td>
<td>.24</td>
<td>.23</td>
<td>.26*</td>
<td>.39**</td>
<td>.83**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Peer effort</td>
<td>-.29*</td>
<td>-.31*</td>
<td>-.26*</td>
<td>-.31*</td>
<td>.40**</td>
<td>.35**</td>
<td>.26*</td>
<td>.37**</td>
<td>.39**</td>
<td>.71**</td>
<td>.75**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Peer intra-ability</td>
<td>.05</td>
<td>.37**</td>
<td>.17</td>
<td>.17</td>
<td>-.08</td>
<td>-.00</td>
<td>.03</td>
<td>-.02</td>
<td>-.25*</td>
<td>-.13</td>
<td>-.20</td>
<td>-.24</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Peer intra-conflict</td>
<td>.06</td>
<td>.33**</td>
<td>.22</td>
<td>.28*</td>
<td>-.32*</td>
<td>-.25*</td>
<td>-.31*</td>
<td>-.32*</td>
<td>-.26*</td>
<td>-.49**</td>
<td>-.65**</td>
<td>-.54**</td>
<td>.40**</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. TEffort rating</td>
<td>-.16</td>
<td>-.22</td>
<td>-.12</td>
<td>-.04</td>
<td>-.08</td>
<td>-.16</td>
<td>-.15</td>
<td>.04</td>
<td>.21</td>
<td>.17</td>
<td>.15</td>
<td>.07</td>
<td>.10</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Effort grade</td>
<td>-.34**</td>
<td>-.22</td>
<td>-.23</td>
<td>-.18</td>
<td>-.03</td>
<td>-.05</td>
<td>.01</td>
<td>-.02</td>
<td>.21</td>
<td>.36**</td>
<td>.33**</td>
<td>.24</td>
<td>-.01</td>
<td>-.11</td>
<td>.50**</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>17. Attainment</td>
<td>-.32*</td>
<td>-.30*</td>
<td>-.31*</td>
<td>-.28*</td>
<td>-.08</td>
<td>-.17</td>
<td>-.13</td>
<td>.28*</td>
<td>.25*</td>
<td>.28*</td>
<td>.30*</td>
<td>-.14</td>
<td>-.06</td>
<td>.74**</td>
<td>.61**</td>
<td>------</td>
<td></td>
</tr>
</tbody>
</table>

Note. AB = Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics; NS = Need Support; PSC = Physical Self-Concept; T = Teacher. **p < .01 *p < .05
Table 7.3

Correlations Among Amotivation Dimensions, Perceptions of Psychological Need Support, PSC, Peer Motivational Climate, Student Effort and Attainment in Netball.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Def AB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Def EB</td>
<td>.50**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Insuff TV</td>
<td>.62**</td>
<td>.62**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unapp TC</td>
<td>.50**</td>
<td>.81**</td>
<td>.47**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Autonomy NS</td>
<td>-.42**</td>
<td>-.67**</td>
<td>-.31*</td>
<td>-.56**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Relatedness NS</td>
<td>-.54**</td>
<td>-.58**</td>
<td>-.38**</td>
<td>-.51**</td>
<td>.85**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Competence NS</td>
<td>-.56**</td>
<td>-.57**</td>
<td>-.28*</td>
<td>-.40**</td>
<td>.80**</td>
<td>.84**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Total NS</td>
<td>-.53**</td>
<td>-.65**</td>
<td>-.34**</td>
<td>-.52**</td>
<td>.94**</td>
<td>.95**</td>
<td>.93**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PSC</td>
<td>-.31*</td>
<td>-.21</td>
<td>-.10</td>
<td>-.09</td>
<td>.25*</td>
<td>.22</td>
<td>.23</td>
<td>.25*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Peer improve</td>
<td>-.43**</td>
<td>-.34**</td>
<td>-.29</td>
<td>-.12</td>
<td>.48**</td>
<td>.33**</td>
<td>.46**</td>
<td>.45**</td>
<td>.45**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Peer relatedness</td>
<td>-.48**</td>
<td>-.43**</td>
<td>-.42**</td>
<td>-.27*</td>
<td>.54**</td>
<td>.42**</td>
<td>.52**</td>
<td>.53**</td>
<td>.49**</td>
<td>.82**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Peer effort</td>
<td>-.40**</td>
<td>-.45**</td>
<td>-.41*</td>
<td>-.38**</td>
<td>.49**</td>
<td>.39**</td>
<td>.41**</td>
<td>.46**</td>
<td>.33**</td>
<td>.67**</td>
<td>.83**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Peer intra-ability</td>
<td>-.06</td>
<td>.01</td>
<td>.05</td>
<td>.04</td>
<td>-.09</td>
<td>.01</td>
<td>-.06</td>
<td>-.05</td>
<td>.01</td>
<td>-.02</td>
<td>-.17</td>
<td>-.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Peer intra-conflict</td>
<td>.09</td>
<td>.14</td>
<td>.16</td>
<td>.19</td>
<td>-.28*</td>
<td>-.24</td>
<td>-.25*</td>
<td>-.28*</td>
<td>-.30*</td>
<td>-.20</td>
<td>-.45**</td>
<td>-.47**</td>
<td>.34**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. TEffort rating</td>
<td>-.48**</td>
<td>-.34**</td>
<td>-.31**</td>
<td>-.21</td>
<td>.23</td>
<td>-.22*</td>
<td>.28*</td>
<td>.26*</td>
<td>.30*</td>
<td>.57**</td>
<td>.53**</td>
<td>.50**</td>
<td>.13</td>
<td>-.15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Effort grade</td>
<td>-.26*</td>
<td>-.34**</td>
<td>-.31**</td>
<td>-.24</td>
<td>.22</td>
<td>.17</td>
<td>.29*</td>
<td>.24</td>
<td>.17</td>
<td>.26*</td>
<td>.30*</td>
<td>.20</td>
<td>.03</td>
<td>-.12</td>
<td>.48**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Attainment</td>
<td>-.57**</td>
<td>-.44**</td>
<td>-.53**</td>
<td>-.28*</td>
<td>.29*</td>
<td>.26*</td>
<td>.35*</td>
<td>.32*</td>
<td>.20</td>
<td>.41**</td>
<td>.45**</td>
<td>.45**</td>
<td>.20</td>
<td>.03</td>
<td>.62**</td>
<td>.68**</td>
<td></td>
</tr>
</tbody>
</table>

*Note: AB = Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics; NS = Need Support; PSC = Physical Self-Concept; T = Teacher.

**p < .01 *p < .05
Table 7.4

Correlations Among Amotivation Dimensions, Perceptions of Psychological Need Support, PSC, Peer Motivational Climate, Student Effort and Attainment in Dance.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.72*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>.84**</td>
<td>.57**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>.77**</td>
<td>.64**</td>
<td>.67**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>-.27*</td>
<td>-.30*</td>
<td>-.19</td>
<td>-.39**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>-.38**</td>
<td>-.42**</td>
<td>-.34**</td>
<td>-.47**</td>
<td>.85**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>-.34**</td>
<td>-.44**</td>
<td>-.34**</td>
<td>-.47**</td>
<td>.83**</td>
<td>.92**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>-.36**</td>
<td>-.40**</td>
<td>-.30*</td>
<td>-.46**</td>
<td>.94**</td>
<td>.97**</td>
<td>.96**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>-.36**</td>
<td>-.29*</td>
<td>-.16</td>
<td>.06</td>
<td>.22</td>
<td>.22</td>
<td>.27*</td>
<td>.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>-.29*</td>
<td>-.12</td>
<td>-.29*</td>
<td>-.29*</td>
<td>.44**</td>
<td>.38**</td>
<td>.41**</td>
<td>.28*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>-.38**</td>
<td>-.16</td>
<td>-.37**</td>
<td>-.31*</td>
<td>-.37**</td>
<td>.40**</td>
<td>.41**</td>
<td>.50**</td>
<td>.73**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>-.47**</td>
<td>-.33**</td>
<td>-.49**</td>
<td>-.41**</td>
<td>-.36**</td>
<td>.42**</td>
<td>.48**</td>
<td>.44**</td>
<td>.36**</td>
<td>.60**</td>
<td>.75**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>.18</td>
<td>.14</td>
<td>.05</td>
<td>.09</td>
<td>.03</td>
<td>.07</td>
<td>.04</td>
<td>.05</td>
<td>-.27*</td>
<td>-.14</td>
<td>-.27*</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>.09</td>
<td>.19</td>
<td>.21</td>
<td>.20</td>
<td>-.21</td>
<td>-.22</td>
<td>-.22</td>
<td>-.22</td>
<td>-.37**</td>
<td>-.29*</td>
<td>-.55**</td>
<td>-.42**</td>
<td>.42**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>-.38**</td>
<td>-.18</td>
<td>-.34**</td>
<td>-.22</td>
<td>-.22</td>
<td>-.15</td>
<td>-.02</td>
<td>-.14</td>
<td>-.02</td>
<td>-.28*</td>
<td>.16</td>
<td>.23</td>
<td>-.14</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>-.24</td>
<td>-.07</td>
<td>-.27*</td>
<td>-.19</td>
<td>-.04</td>
<td>.01</td>
<td>.07</td>
<td>.01</td>
<td>-.08</td>
<td>.35**</td>
<td>.16</td>
<td>.15</td>
<td>-.04</td>
<td>-.02</td>
<td>.65**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>-.42**</td>
<td>-.12</td>
<td>-.37**</td>
<td>-.04</td>
<td>-.10</td>
<td>.04</td>
<td>.11</td>
<td>.01</td>
<td>.20</td>
<td>.33*</td>
<td>.24</td>
<td>.23</td>
<td>-.16</td>
<td>.01</td>
<td>.65**</td>
<td>.59**</td>
<td></td>
</tr>
</tbody>
</table>

Note. AB = Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics; NS = Need Support; PSC = Physical Self-Concept; T = Teacher.

**p< .01 *p < .05
Table 7.5
Correlations Among Amotivation Dimensions, Perceptions of Psychological Need Support, PSC, Peer Motivational Climate, Student Effort and Attainment in Swimming.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Def AB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Def EB</td>
<td></td>
<td>.77**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Insuff TV</td>
<td></td>
<td></td>
<td>.81**</td>
<td>.81**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unapp TC</td>
<td></td>
<td>.62**</td>
<td></td>
<td>.73**</td>
<td>.74**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Autonomy NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Relatedness NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Competence NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Total NS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PSC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Peer improve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Peer relatedness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Peer effort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Peer intra-ability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Peer intra-conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. TEffort rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Effort grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Attainment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. AB = Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics; NS = Need Support; PSC = Physical Self-Concept; T = Teacher.

**p< .01  *p < .05
Table 7.6
Correlations Among Amotivation Dimensions, Perceptions of Psychological Need Support, PSC, Peer Motivational Climate, Student Effort and Attainment in Tennis.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Def AB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Def EB</td>
<td>.43**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Insuff TV</td>
<td>.75**</td>
<td>.64**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unapp TC</td>
<td>.44**</td>
<td>.78**</td>
<td>.65**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Autonomy NS</td>
<td>- .39**</td>
<td>- .63**</td>
<td>- .46**</td>
<td>- .59**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Relatedness NS</td>
<td>- .36**</td>
<td>- .45**</td>
<td>- .29*</td>
<td>- .36**</td>
<td>.80**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Competence NS</td>
<td>- .36**</td>
<td>- .46**</td>
<td>- .30*</td>
<td>- .38**</td>
<td>.80**</td>
<td>.96**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Total NS</td>
<td>- .39**</td>
<td>- .54**</td>
<td>- .37**</td>
<td>- .47**</td>
<td>.91**</td>
<td>.97**</td>
<td>.97**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PSC</td>
<td>-.29*</td>
<td>-.15</td>
<td>-.08</td>
<td>-.14</td>
<td>.44**</td>
<td>.44**</td>
<td>.46**</td>
<td>.47**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Peer improve</td>
<td>-.36**</td>
<td>-.44**</td>
<td>- .33**</td>
<td>-.50**</td>
<td>.49**</td>
<td>.39**</td>
<td>.40**</td>
<td>.45**</td>
<td>.38**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Peer relatedness</td>
<td>-.48**</td>
<td>-.48**</td>
<td>- .37**</td>
<td>-.48**</td>
<td>.56**</td>
<td>.54**</td>
<td>.58**</td>
<td>.59**</td>
<td>.55**</td>
<td>.81**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Peer effort</td>
<td>-.47**</td>
<td>- .50**</td>
<td>- .41**</td>
<td>- .49**</td>
<td>.53**</td>
<td>.53**</td>
<td>.56**</td>
<td>.57**</td>
<td>.43**</td>
<td>.72**</td>
<td>.85**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Peer intra-ability</td>
<td>.02</td>
<td>.12</td>
<td>.06</td>
<td>.15</td>
<td>-.09</td>
<td>.05</td>
<td>.00</td>
<td>-.01</td>
<td>-.10</td>
<td>-.19</td>
<td>-.24</td>
<td>-.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Peer intra-conflict</td>
<td>.15</td>
<td>.19</td>
<td>.18</td>
<td>.33**</td>
<td>-.20</td>
<td>-.23</td>
<td>-.20</td>
<td>-.22</td>
<td>-.30*</td>
<td>-.44**</td>
<td>-.42**</td>
<td>-.47**</td>
<td>.47**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. TEffort rating</td>
<td>-.29*</td>
<td>-.32*</td>
<td>-.33*</td>
<td>-.27*</td>
<td>.31*</td>
<td>.29*</td>
<td>.27*</td>
<td>.30*</td>
<td>.30*</td>
<td>.38**</td>
<td>.48**</td>
<td>.50**</td>
<td>-.05</td>
<td>-.20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Effort grade</td>
<td>-.17</td>
<td>-.25*</td>
<td>-.15</td>
<td>-.15</td>
<td>.22</td>
<td>.24</td>
<td>.26*</td>
<td>.25*</td>
<td>.09</td>
<td>.31*</td>
<td>.39**</td>
<td>.48**</td>
<td>-.07</td>
<td>-.06</td>
<td>.73**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Attainment</td>
<td>-.40**</td>
<td>-.18</td>
<td>-.30*</td>
<td>-.21</td>
<td>.10</td>
<td>.10</td>
<td>.15</td>
<td>.12</td>
<td>.18</td>
<td>.27*</td>
<td>.33**</td>
<td>.36**</td>
<td>-.02</td>
<td>-.13</td>
<td>.74**</td>
<td>.58**</td>
<td></td>
</tr>
</tbody>
</table>

*Note. AB = Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics; NS = Need Support; PSC = Physical Self-Concept; T = Teacher.

**p< .01 *p < .05
Table 7.7

Correlations Among Amotivation Dimensions, Perceptions of Psychological Need Support, PSC, Peer Motivational Climate, Student Effort and Attainment in Athletics.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Def AB</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Def EB</td>
<td>.72**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Insuff TV</td>
<td>.77**</td>
<td>.74**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unapp TC</td>
<td>.66**</td>
<td>.79**</td>
<td>.77**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Autonomy NS</td>
<td>-.27*</td>
<td>-.39**</td>
<td>-.38**</td>
<td>.79**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Relatedness NS</td>
<td>-.38**</td>
<td>-.47**</td>
<td>-.41**</td>
<td>-.46**</td>
<td>.87**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Competence NS</td>
<td>-.34**</td>
<td>-.41**</td>
<td>-.38**</td>
<td>-.52**</td>
<td>.84**</td>
<td>.84**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Total NS</td>
<td>-.35**</td>
<td>-.44**</td>
<td>-.41**</td>
<td>-.52**</td>
<td>.95**</td>
<td>.95**</td>
<td>.94**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PSC</td>
<td>-.59**</td>
<td>-.58**</td>
<td>-.50**</td>
<td>-.51**</td>
<td>.35**</td>
<td>.34**</td>
<td>.50**</td>
<td>.42**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Peer improve</td>
<td>-.38**</td>
<td>-.38**</td>
<td>-.49**</td>
<td>-.41**</td>
<td>.46**</td>
<td>.34**</td>
<td>.43**</td>
<td>.43**</td>
<td>.33**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Peer relatedness</td>
<td>-.36**</td>
<td>-.46**</td>
<td>-.48**</td>
<td>-.46**</td>
<td>.59**</td>
<td>.47**</td>
<td>.55**</td>
<td>.57**</td>
<td>.43**</td>
<td>.87**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Peer effort</td>
<td>-.19</td>
<td>-.38**</td>
<td>-.30*</td>
<td>-.38**</td>
<td>.55**</td>
<td>.51**</td>
<td>.52**</td>
<td>.55**</td>
<td>.25*</td>
<td>.80**</td>
<td>.84**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Peer intra-ability</td>
<td>.27*</td>
<td>.11</td>
<td>.24</td>
<td>.11</td>
<td>-.05</td>
<td>-.02</td>
<td>-.05</td>
<td>-.04</td>
<td>-.15</td>
<td>-.14</td>
<td>-.18</td>
<td>-.00</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Peer intra-conflict</td>
<td>.33**</td>
<td>.35**</td>
<td>.30*</td>
<td>.38**</td>
<td>-.41**</td>
<td>-.51**</td>
<td>-.45**</td>
<td>-.48**</td>
<td>-.22</td>
<td>-.43**</td>
<td>-.47**</td>
<td>-.48**</td>
<td>.30**</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. TEffort rating</td>
<td>-.41**</td>
<td>-.33**</td>
<td>-.33**</td>
<td>-.25*</td>
<td>.01</td>
<td>.03</td>
<td>.09</td>
<td>.05</td>
<td>.32*</td>
<td>.22</td>
<td>.13</td>
<td>.14</td>
<td>-.21</td>
<td>-.13</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Effort grade</td>
<td>-.32*</td>
<td>-.34**</td>
<td>-.26</td>
<td>-.24</td>
<td>.05</td>
<td>.07</td>
<td>.09</td>
<td>.07</td>
<td>.32*</td>
<td>.23</td>
<td>.12</td>
<td>.19</td>
<td>-.02</td>
<td>-.16</td>
<td>.78**</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>17. Attainment</td>
<td>-.41**</td>
<td>-.22</td>
<td>-.31*</td>
<td>-.18</td>
<td>-.08</td>
<td>-.04</td>
<td>-.08</td>
<td>-.01</td>
<td>.36*</td>
<td>.29*</td>
<td>.19</td>
<td>.19</td>
<td>-.23</td>
<td>-.17</td>
<td>.64**</td>
<td>.52**</td>
<td>--------</td>
</tr>
</tbody>
</table>

**Note. AB = Ability Beliefs; EB = Effort Beliefs; TV = Task Value; TC = Task Characteristics; NS = Need Support; PSC = Physical Self-Concept; T = Teacher.**

**p< .01 *p < .05**
Predictors of variations in the intercepts and growth trajectories. A number of conditional growth models (Tables 7.8 to 7.15) were conducted by adding a number of theory-based predictors into the multilevel regression equations (models). The aim was to explore potential changes in the intercept and slope (rate of change) of the amotivation dimensions, perceptions of autonomy, competence and relatedness and peer motivational climate dimensions across the school year whilst controlling for PSC. First, the amotivation dimensions were analysed to explore whether the more student-centered dimensions such as deficient ability beliefs and deficient effort beliefs (see Table 7.8) were stronger predictors of the situational dimensions (see Table 7.9); insufficient task value and unappealing task characteristics than vice versa. Conditional models were also conducted to explore the amotivation dimensions as predictors of teacher ratings of student effort, effort grade and attainment grade (see Table 7.10). Secondly, students’ perceptions of psychological need support (autonomy, competence and relatedness) were investigated as predictors of the amotivation dimensions (see Table 7.11) and teacher ratings of student effort, effort and attainment grades (see Table 7.12). The peer motivational dimensions were also examined as potential predictors of the four amotivation dimensions (see Table 7.13) and teacher ratings of student effort, effort grade and attainment grade (see Table 7.14). Final composite models were conducted thereafter, which included students’ perceptions of psychological need support and the amotivation dimensions as predictors of student effort, effort grade and attainment grade (Table 7.15) and the peer motivational climate dimensions and the amotivation dimensions as predictors of student effort, effort grade and attainment grade (Table 7.16). The results of all the conditional models (Table 7.8 to Table 7.16) are presented by displaying the regression coefficients and standard errors for the outcome variables. The results are summarised below for each of the conditional models conducted.

Interrelationships among amotivation dimensions

Deficient ability beliefs and deficient effort beliefs predicting change in insufficient task values and unappealing task characteristics. At the start of the study deficient ability beliefs ($\beta = .49$, $SE = .06$) and deficient effort beliefs ($\beta = .23$, $SE = .07$) positively predicted insufficient task values. Deficient effort beliefs also predicted unappealing task characteristics ($\beta = .51$, $SE = .08$). Over time, only changes in deficient effort beliefs predicted change in unappealing task characteristics ($\beta = .07$, $SE = .03$) (see Table 7.8).
A Model of Deficiency Ability Beliefs (AB) and Deficiency Effort Beliefs (EB) Predicting Insufficient Task Values (TV) and Unappealing Task Characteristics (TC) whilst controlling for PSC

Table 7.8

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Insufficient TV</th>
<th>Unappealing TC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.12 (.01)*</td>
<td>2.23 (.09)*</td>
</tr>
<tr>
<td>Deficiency in AB</td>
<td>.49 (.06)*</td>
<td>.12 (.07)</td>
</tr>
<tr>
<td>Deficiency in EB</td>
<td>.23 (.07)*</td>
<td>.51 (.08)*</td>
</tr>
<tr>
<td>PSC</td>
<td>.03 .06</td>
<td>.11 (.07)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>.00 (.02)</td>
<td>.05 (.03)</td>
</tr>
<tr>
<td>Deficient in AB</td>
<td>.02 (.02)</td>
<td>-.00 (.03)</td>
</tr>
<tr>
<td>Deficient in EB</td>
<td>.02 (.02)</td>
<td>.07 (.03)*</td>
</tr>
<tr>
<td>PSC</td>
<td>.02 (.02)</td>
<td>-.03 .02</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>.08 (.03)*</td>
<td>0.06 (.03)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>.47 (.04)*</td>
<td>0.66 (.05)*</td>
</tr>
</tbody>
</table>

*p = < .01

Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept

Insufficient task values and unappealing task characteristics predicting change in deficient ability beliefs and deficient effort beliefs. At the start of the study, insufficient task values was the only positive predictor of deficient ability beliefs ($\beta = .69, SE = .08$). However, both unappealing task characteristics ($\beta = .47, SE = .08$) and insufficient task values ($\beta = .24, SE = .08$) predicted deficient effort beliefs. Insufficient task values and unappealing task characteristics did not predict change in deficient ability beliefs and deficient effort beliefs (see Table 7.9).

Amotivation dimensions as predictors of change in the outcome variables

The amotivation dimensions did not predict teacher ratings of student effort, effort grade or attainment grade at the start of the study. Over time, changes in deficient ability beliefs ($\beta = -.06, SE = .03$) was the only amotivation dimension to predict change in attainment grade (see Table 7.10).
Table 7.9

A Model of Insufficient Task Value (TV) and Unappealing Task Characteristics (TC)
Predicting Deficient Ability Beliefs (AB) and Deficient Effort Beliefs (EB) whilst
controlling for PSC

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Deficiency in AB</th>
<th>Deficiency in EB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.51 (.10)*</td>
<td>2.09 (.09)*</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>.69 (.08)*</td>
<td>.24 (.08)*</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>.00 (.09)</td>
<td>.47 (.08)*</td>
</tr>
<tr>
<td>PSC</td>
<td>-.14 (.06)*</td>
<td>-.16 (.06)*</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-.03 (.02)</td>
<td>-.04 (.02)</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>.04 (.03)</td>
<td>.01 (.03)</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>.01 (.03)</td>
<td>.01 (.03)</td>
</tr>
<tr>
<td>PSC</td>
<td>-.01 (.02)</td>
<td>-.02 (.02)</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>.11 (.04)*</td>
<td>.08 (.03)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>.57 (.05)*</td>
<td>.53 (.04)*</td>
</tr>
</tbody>
</table>

*p < .01

Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept
Table 7.10

_A Model of the Four Amotivation Dimensions Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC_

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Teacher ratings of student effort</th>
<th>Effort grade</th>
<th>Attainment grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.01 (.09)*</td>
<td>3.73 (.08)*</td>
<td>3.44 (.09)*</td>
</tr>
<tr>
<td>Deficient AB</td>
<td>-.06 (.08)</td>
<td>-.02 (.07)</td>
<td>-.05 (.08)</td>
</tr>
<tr>
<td>Deficient EB</td>
<td>-.07 (.08)</td>
<td>.01 (.07)</td>
<td>-.14 (.08)</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>-.02 (.09)</td>
<td>-.05 (.08)</td>
<td>-.03 (.09)</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>.02 (.09)</td>
<td>-.03 (.08)</td>
<td>.03 (.09)</td>
</tr>
<tr>
<td>PSC</td>
<td>-.02 (.06)</td>
<td>-.01 (.06)</td>
<td>.02 (.06)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-.13 (.02)*</td>
<td>-.02 (.02)</td>
<td>-.01 (.02)</td>
</tr>
<tr>
<td>Deficient AB</td>
<td>-.03 (.03)</td>
<td>-.04 (.03)</td>
<td>-.06 (.03)*</td>
</tr>
<tr>
<td>Deficient EB</td>
<td>.02 (.03)</td>
<td>-.05 (.03)</td>
<td>-.04 (.03)</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>-.00 (.03)</td>
<td>.03 (.03)</td>
<td>.02 (.03)</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>-.00 (.03)</td>
<td>.01 (.02)</td>
<td>-.00 (.02)</td>
</tr>
<tr>
<td>PSC</td>
<td>.02 (.02)</td>
<td>-.01 (.02)</td>
<td>.07 (.07)</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.17 (.05)*</td>
<td>0.16 (.04)*</td>
<td>0.23 (.06)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>0.50 (.04)*</td>
<td>0.40 (.03)*</td>
<td>0.49 (.04)*</td>
</tr>
</tbody>
</table>

*p = < .01

*Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept*

_Perceptions of perceived psychological need support predicting change in the amotivation dimensions and in the outcome variables._

_Amotivation dimensions: _Results of the conditional model can be seen in Table 7.11, however, in this particular model, when comparing the data to the prior correlational analyses across the six different activities (see Tables 7.2 to 7.7), the results for some of the amotivation dimensions seem to have been marked by net suppression. Net suppression occurs when the predictor variable (i.e. autonomy need support) has a_
regression coefficient with an opposite sign to its bivariate correlation with the criterion variable (Cohen & Cohen, 1983). In this case, autonomy need support was negatively correlated with deficient ability beliefs in all the activities apart from gymnastics, whereby it was positively correlated in the conditional model (although not significant). Due to the influence suppression may have had on the latter findings, suppression effects were subsequently tested on each of the psychological need support variables (autonomy, competence and relatedness) by running separate models for each predictor of the amotivation dimensions. Therefore, perceptions of autonomy, competence and relatedness need support were entered into the model separately (see Table 7.112). The findings showed at the start of the study, perceptions of autonomy ($\beta = -.21, SE = .07$), competence ($\beta = -.25, SE = .08$) and relatedness need support ($\beta = -.26, SE = .08$) significantly predicted deficiency in effort beliefs and unappealing task characteristics (autonomy NS ($\beta = -.31, SE = .07$), competence NS ($\beta = -.24, SE = .08$) and relatedness NS ($\beta = -.37, SE = .09$). Competence and relatedness need support predicted deficiency in ability beliefs but perceptions of psychological need support did not predict insufficient task values at the start of term. Over time, changes in autonomy NS negatively predicted change in deficiency ability beliefs ($\beta = -.07, SE = .03$) and insufficient task values ($\beta = -.07, SE = .02$). Changes in competence NS negatively predicted change in insufficient task values ($\beta = -.05, SE = .02$) and unappealing task characteristics ($\beta = -.04, SE = .02$).

Furthermore, due to the suppression effects, additional analyses were run with the three psychological need support variables collapsed into a composite variable labelled need support (see Table 7.113). Results showed at the beginning of the study, perceived psychological need support significantly negatively predicted deficient ability beliefs ($\beta = -.20, SE = .09$), deficient effort beliefs ($\beta = -.26, SE = .08$) and unappealing task characteristics ($\beta = -.38, SE = .09$). Over the school year, an increase in perceived psychological need support significantly predicted a decrease in insufficient task values but no significant predictions of change were found between need support and the other amotivation dimensions.\(^4\)

---

\(^4\) The composite variable ‘perceived need support’ was only used in the analyses in relation to predicting the amotivation dimensions, not the outcome variables.
Table 7.11

_A Model of Students’ Perceptions of Teacher Psychological Need Support Predicting the Four Amotivation Dimensions whilst controlling for PSC_

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Deficiency in AB</th>
<th>Deficiency in EB</th>
<th>Insufficient TV</th>
<th>Unappealing TC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.69 (.11)*</td>
<td>2.25 (.10)*</td>
<td>2.25 (.11)*</td>
<td>2.27 (.10)*</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>.31 (.14)*</td>
<td>-.09 (.13)</td>
<td>.11 (.14)</td>
<td>-.21 (.13)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>-.56 (.16)*</td>
<td>-.09 (.15)</td>
<td>-.03 (.16)</td>
<td>.23 (.15)</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>-.00 (.20)</td>
<td>-.08 (.18)</td>
<td>-.21 (.19)</td>
<td>-.38 (.19)*</td>
</tr>
<tr>
<td>PSC</td>
<td>-.14 (.08)</td>
<td>-.12 (.08)</td>
<td>-.09 (.08)</td>
<td>.05 (.08)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-.08 (.03)*</td>
<td>-.07 (.03)*</td>
<td>-.06 (.03)*</td>
<td>-.02 (.03)</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>-.07 (.05)</td>
<td>-.02 (.04)</td>
<td>-.07 (.05)</td>
<td>-.04 (.04)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>.14 (.05)*</td>
<td>.04 (.05)</td>
<td>.02 (.05)</td>
<td>-.08 (.05)</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>-.08 (.06)</td>
<td>-.04 (.05)</td>
<td>.00 (.06)</td>
<td>.10 (.06)</td>
</tr>
<tr>
<td>PSC</td>
<td>-.03 (.03)</td>
<td>-.02 (.03)</td>
<td>-.01 (.03)</td>
<td>-.04 (.03)</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.15 (.06)*</td>
<td>0.14 (.06)*</td>
<td>0.11 (.05)*</td>
<td>0.10 (.05)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>1.12 (.09)*</td>
<td>0.94 (.08)*</td>
<td>1.06 (.09)*</td>
<td>1.02 (.08)*</td>
</tr>
</tbody>
</table>

* *p = .01

_Note._ AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept
### Table 7.112

*A Model of Students’ Perceptions of Teacher Psychological Need Support as Single Predictors of the Four Amotivation Dimensions whilst controlling for PSC*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Deficiency in AB</th>
<th>Deficiency in EB</th>
<th>Insufficient TV</th>
<th>Unappealing TC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.69 (.11)*</td>
<td>2.25 (.10)*</td>
<td>2.25 (.11)*</td>
<td>2.27 (.10)*</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>-.04 (.08)</td>
<td>-.21 (.07)*</td>
<td>-.06 (.07)</td>
<td>-.31 (.07)*</td>
</tr>
<tr>
<td>Competence NS</td>
<td>-.32 (.09)*</td>
<td>-.25 (.08)*</td>
<td>-.12 (.08)</td>
<td>-.24 (.08)*</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>-.19 (.09)*</td>
<td>-.26 (.08)*</td>
<td>-.14 (.09)</td>
<td>-.37 (.09)*</td>
</tr>
<tr>
<td>PSC</td>
<td>-.20 (.09)*</td>
<td>-.17 (.08)*</td>
<td>-.09 (.08)</td>
<td>.03 (.09)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-.08 (.03)*</td>
<td>-.07 (.03)*</td>
<td>-.06 (.03)*</td>
<td>-.02 (.03)</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>-.07 (.03)*</td>
<td>-.03 (.02)</td>
<td>-.07 (.02)*</td>
<td>-.03 (.02)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>-.01 (.03)</td>
<td>.02 (.02)</td>
<td>-.05 (.02)*</td>
<td>-.04 (.02)*</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>-.05 (.03)</td>
<td>-.02 (.02)</td>
<td>-.05 (.03)</td>
<td>-.00 (.03)</td>
</tr>
<tr>
<td>PSC</td>
<td>-.04 (.03)</td>
<td>-.03 (.03)</td>
<td>-.04 (.03)</td>
<td>-.07 (.03)*</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.15 (.06)*</td>
<td>0.14 (.06)*</td>
<td>0.11 (.05)*</td>
<td>0.10 (.05)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>1.12 (.09)*</td>
<td>0.94 (.08)*</td>
<td>1.06 (.09)*</td>
<td>1.02 (.08)*</td>
</tr>
</tbody>
</table>

*p = <.01

*Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept*
Table 7.113

A Model of Student’s Perceptions of Psychological Need Support (NS) Predicting the Four Amotivation Dimensions whilst controlling for PSC

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Deficiency in AB</th>
<th>Deficiency in EB</th>
<th>Insufficient TV</th>
<th>Unappealing TC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.68 (.11)*</td>
<td>2.25 (.10)*</td>
<td>2.24 (.12)*</td>
<td>2.27 (.11)*</td>
</tr>
<tr>
<td>NS</td>
<td>- .20 (.09)*</td>
<td>- .26 (.08)*</td>
<td>- .11 (.09)</td>
<td>- .38 (.09)*</td>
</tr>
<tr>
<td>PSC</td>
<td>- .19 (.09)*</td>
<td>- .13 (.08)</td>
<td>- .09 (.08)</td>
<td>.07 (.08)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>- .08 (.03)*</td>
<td>- .07 (.03)*</td>
<td>- .06 (.03)*</td>
<td>- .02 (.03)</td>
</tr>
<tr>
<td>NS</td>
<td>- .03 (.03)</td>
<td>- .02 (.03)</td>
<td>- .06 (.03)*</td>
<td>- .01 (.03)</td>
</tr>
<tr>
<td>PSC</td>
<td>- .02 (.03)</td>
<td>- .01 (.03)</td>
<td>- .00 (.03)</td>
<td>.07 (.08)</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.12 (.06)*</td>
<td>0.15 (.06)*</td>
<td>0.11 (.05)*</td>
<td>0.12 (.05)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>1.20 (.10)*</td>
<td>0.94 (.08)*</td>
<td>1.08 (.09)*</td>
<td>1.04 (.08)*</td>
</tr>
</tbody>
</table>

*p = < .01

Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept
Teacher ratings of student effort, effort grade and attainment grade: At the start of the study and over time, perceptions of need support did not significantly predict teacher ratings of student effort, effort grade or attainment grade (see Table 7.12)

Table 7.12
A Model of Students’ Perceptions of Teacher Psychological Need Support Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Teacher ratings of student effort</th>
<th>Effort grade</th>
<th>Attainment grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.08 (.09)*</td>
<td>3.76 (.08)*</td>
<td>3.45 (.09)*</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>.01 (.10)</td>
<td>.01 (.09)</td>
<td>-.01 (.10)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>.05 (.11)</td>
<td>.10 (.10)</td>
<td>.04 (.11)</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>-.16 (.14)</td>
<td>-.18 (.12)</td>
<td>-.08 (.14)</td>
</tr>
<tr>
<td>PSC</td>
<td>.00 (.06)</td>
<td>-.01 (.06)</td>
<td>.05 (.06)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-.13 (.02)*</td>
<td>-.02 (.02)</td>
<td>.01 (.02)</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>-.01 (.03)</td>
<td>.01 (.03)</td>
<td>-.03 (.03)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>.00 (.04)</td>
<td>-.01 (.03)</td>
<td>.02 (.04)</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>.03 (.04)</td>
<td>.04 (.04)</td>
<td>.01 (.04)</td>
</tr>
<tr>
<td>PSC</td>
<td>.04 (.02)*</td>
<td>.01 (.02)</td>
<td>.01 (.02)</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.17 (.05)*</td>
<td>0.17 (.04)*</td>
<td>0.23 (.06)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>0.54 (.04)*</td>
<td>0.43 (.03)*</td>
<td>0.54 (.04)*</td>
</tr>
</tbody>
</table>

* p = < .01

Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept

Peer motivational climate dimensions predicting change in the amotivation dimensions and the outcome variables.

Amotivation dimensions: At the start of the study peer effort negatively predicted deficiency in ability beliefs ($\beta =-.26$, SE .13), deficiency in effort beliefs ($\beta =-.27$, SE
and unappealing task characteristics ($\beta = -.36, SE = .12$), but intra-class conflict positively predicted deficiency in ability beliefs ($\beta = .23, SE = .09$). Peer effort was the only negative predictor of deficiency in effort beliefs ($\beta = -.27, SE = .11$) and peer improvement positively predicted insufficient task values ($\beta = .30, SE = .12$) and unappealing task characteristics ($\beta = .29, SE = .12$). Over time, changes in peer improvement negatively predicted deficiency in effort beliefs ($\beta = -.08, SE = .04$), insufficient task values ($\beta = -.10, SE = .04$) and unappealing task characteristics ($\beta = -.11, SE = .04$) and changes in intra-class conflict positively predicted changes in deficiency in ability beliefs ($\beta = .06, SE = .03$) (see Table 7.13).

**Teacher ratings of student effort, effort grade and attainment grade:** At the start of the study, intra-class conflict was the only peer motivational climate dimension that positively predicted teacher ratings of student effort ($\beta = .18, SE = .06$) and attainment grade ($\beta = .19, SE = .06$). Over time, peer relatedness negatively predicted students’ effort grade ($\beta = -.07, SE = .03$) and intra-class conflict negatively predicted students’ attainment grade ($\beta = -.04, SE = .02$) but no other peer motivational dimensions significantly predicted the outcome variables (see Table 7.14).

Further conditional models were calculated incorporating the peer motivational climate dimensions and the amotivation dimensions into the same model as potential predictors of teacher ratings of student effort, effort grade and attainment grade. Controlling for peer motivational climate, the amotivation dimensions did not significantly predict the outcome variables at the start of the study, but deficient ability beliefs negatively predicted students’ attainment grade over time ($\beta = -.07, SE = .03$) (see Table 7.15). Similar results were found when perceptions of psychological need support were entered into the same model as the four amotivation dimensions (see Table 7.16). Deficient ability beliefs negatively predicted students’ attainment grade ($\beta = -.06, SE = .03$) when perceptions of need support and PSC were controlled for.
Table 7.13

*A Model of Peer Motivational Climate Dimensions Predicting the Four Amotivation Dimensions whilst controlling for PSC*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Deficiency in AB</th>
<th>Deficiency in EB</th>
<th>Insufficient TV</th>
<th>Unappealing TC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.61 (.11)*</td>
<td>2.18 (.10)*</td>
<td>2.17 (.10)*</td>
<td>2.18 (.11)*</td>
</tr>
<tr>
<td>Peer improvement</td>
<td>.11 (.13)</td>
<td>.20 (.11)</td>
<td>.30 (.12)*</td>
<td>.29 (.12)*</td>
</tr>
<tr>
<td>Peer relatedness</td>
<td>-.23 (.15)</td>
<td>-.17 (.13)</td>
<td>-.41 (.14)*</td>
<td>-.24 (.14)</td>
</tr>
<tr>
<td>Peer effort</td>
<td>-.26 (.13)*</td>
<td>-.27 (.11)*</td>
<td>-.18 (.12)</td>
<td>-.36 (.12)*</td>
</tr>
<tr>
<td>Intra-class ability</td>
<td>-.05 (.08)</td>
<td>.11 (.07)</td>
<td>-.02 (.07)</td>
<td>.01 (.08)</td>
</tr>
<tr>
<td>Intra-class conflict</td>
<td>-.23 (.09)*</td>
<td>-.03 (.08)</td>
<td>-.08 (.08)</td>
<td>-.03 (.09)</td>
</tr>
<tr>
<td>PSC</td>
<td>-.13 (.09)</td>
<td>-.05 (.08)</td>
<td>.03 (.09)</td>
<td>.15 (.09)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-.05 (.04)</td>
<td>-.04 (.03)</td>
<td>-.02 (.03)</td>
<td>.02 (.03)</td>
</tr>
<tr>
<td>Peer improvement</td>
<td>-.05 (.04)</td>
<td>-.08 (.04)*</td>
<td>-.10 (.04)*</td>
<td>-.11 (.04)*</td>
</tr>
<tr>
<td>Peer relatedness</td>
<td>.06 (.05)</td>
<td>.05 (.05)</td>
<td>.09 (.05)</td>
<td>.06 (.05)</td>
</tr>
<tr>
<td>Peer effort</td>
<td>.04 (.04)</td>
<td>.03 (.04)</td>
<td>.02 (.04)</td>
<td>.06 (.04)</td>
</tr>
<tr>
<td>Intra-class ability</td>
<td>.01 (.03)</td>
<td>-.03 (.02)</td>
<td>.01 (.02)</td>
<td>-.00 (.02)</td>
</tr>
<tr>
<td>Intra-class conflict</td>
<td>.06 (.03)*</td>
<td>.00 (.03)</td>
<td>.02 (.03)</td>
<td>.02 .03</td>
</tr>
<tr>
<td>PSC</td>
<td>-.05 (.03)</td>
<td>-.04 (.03)</td>
<td>-.04 (.03)</td>
<td>-.07 (.03)*</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.13 (.06)*</td>
<td>0.15 (.06)*</td>
<td>.08 (.05)</td>
<td>.14 (.06)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>1.19 (.10)*</td>
<td>0.96 (.08)*</td>
<td>1.05 (.08)*</td>
<td>1.05 (.08)*</td>
</tr>
</tbody>
</table>

*p = < .01
Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept
Table 7.14

*A Model of Peer Motivational Climate Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Teacher ratings of student effort</th>
<th>Effort grade</th>
<th>Attainment grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.05 (.08)*</td>
<td>3.76 (.08)*</td>
<td>3.44 (.09)*</td>
</tr>
<tr>
<td>Peer improvement</td>
<td>.03 (.08)</td>
<td>.07 (.08)</td>
<td>.03 (.09)</td>
</tr>
<tr>
<td>Peer relatedness</td>
<td>.14 (.10)</td>
<td>.17 (.09)</td>
<td>.17 (.10)</td>
</tr>
<tr>
<td>Peer effort</td>
<td>.09 (.09)</td>
<td>-.11 (.08)</td>
<td>.07 (.09)</td>
</tr>
<tr>
<td>Intra-class ability</td>
<td>.03 (.05)</td>
<td>-.03 (.05)</td>
<td>-.05 (.06)</td>
</tr>
<tr>
<td>Intra-class conflict</td>
<td>.18 (.06)*</td>
<td>.09 (.06)</td>
<td>.19 (.06)*</td>
</tr>
<tr>
<td>PSC</td>
<td>-.05 (.06)</td>
<td>-.06 (.06)</td>
<td>-.02 (.07)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-.12 (.02)*</td>
<td>-.02 (.02)</td>
<td>.01 (.02)</td>
</tr>
<tr>
<td>Peer improvement</td>
<td>.02 (.03)</td>
<td>.02 (.03)</td>
<td>.03 (.03)</td>
</tr>
<tr>
<td>Peer relatedness</td>
<td>-.05 (.03)</td>
<td>-.07 (.03)*</td>
<td>-.07 (.03)</td>
</tr>
<tr>
<td>Peer effort</td>
<td>.01 (.03)</td>
<td>.05 (.03)</td>
<td>-.01 (.03)</td>
</tr>
<tr>
<td>Intra-class ability</td>
<td>-.01 (.02)</td>
<td>.01 (.02)</td>
<td>.02 (.02)</td>
</tr>
<tr>
<td>Intra-class conflict</td>
<td>-.03 (.02)</td>
<td>-.01 (.02)</td>
<td>-.04 (.02)*</td>
</tr>
<tr>
<td>PSC</td>
<td>.05 (.02)*</td>
<td>.03 (.02)</td>
<td>.04 (.02)*</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.14 (.04)*</td>
<td>0.14 (.04)*</td>
<td>0.23 (.06)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>0.51 (.04)*</td>
<td>0.41 (.03)*</td>
<td>0.52 (.04)*</td>
</tr>
</tbody>
</table>

*p = < .01

*Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept*
Table 7.15

*A Model of Peer Motivational Climate Dimensions and the Four Amotivation Dimensions Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Teacher ratings of student effort</th>
<th>Effort grade</th>
<th>Attainment grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.04 (0.08)*</td>
<td>3.74 (0.08)</td>
<td>3.43 (0.09)</td>
</tr>
<tr>
<td>Peer improvement</td>
<td>0.07 (0.08)</td>
<td>0.09 (0.08)</td>
<td>0.08 (0.08)</td>
</tr>
<tr>
<td>Peer relatedness</td>
<td>0.10 (0.10)</td>
<td>0.15 (0.09)</td>
<td>0.11 (0.10)</td>
</tr>
<tr>
<td>Peer effort</td>
<td>0.07 (0.09)</td>
<td>-0.12 (0.08)</td>
<td>0.04 (0.09)</td>
</tr>
<tr>
<td>Intra-class ability</td>
<td>0.04 (0.05)</td>
<td>-0.04 (0.05)</td>
<td>-0.04 (0.06)</td>
</tr>
<tr>
<td>Intra-class conflict</td>
<td>0.18 (0.06)*</td>
<td>0.09 (0.06)</td>
<td>0.19 (0.06)*</td>
</tr>
<tr>
<td>Deficient AB</td>
<td>0.02 (0.08)</td>
<td>0.00 (0.07)</td>
<td>-0.01 (0.08)</td>
</tr>
<tr>
<td>Deficient EB</td>
<td>-0.12 (0.08)</td>
<td>-0.01 (0.08)</td>
<td>-0.15 (0.08)</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>-0.03 (0.09)</td>
<td>-0.03 (0.08)</td>
<td>-0.04 (0.09)</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>0.03 (0.09)</td>
<td>-0.06 (0.08)</td>
<td>0.02 (0.09)</td>
</tr>
<tr>
<td>PSC</td>
<td>-0.03 (0.06)</td>
<td>-0.04 (0.06)</td>
<td></td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.12 (0.02)*</td>
<td>-0.02 (0.02)</td>
<td>0.01 (0.02)</td>
</tr>
<tr>
<td>Peer improvement</td>
<td>0.00 (0.03)</td>
<td>0.01 (0.03)</td>
<td>0.01 (0.03)</td>
</tr>
<tr>
<td>Peer relatedness</td>
<td>-0.04 (0.03)</td>
<td>-0.07 (0.03)*</td>
<td>-0.05 (0.04)</td>
</tr>
<tr>
<td>Peer effort</td>
<td>0.01 (0.03)</td>
<td>0.05 (0.03)</td>
<td>-0.01 (0.03)</td>
</tr>
<tr>
<td>Intra-class ability</td>
<td>-0.01 (0.02)</td>
<td>-0.02 (0.02)</td>
<td>-0.02 (0.02)</td>
</tr>
<tr>
<td>Intra-class conflict</td>
<td>-0.04 (0.02)*</td>
<td>-0.01 (0.02)</td>
<td>-0.04 (0.02)*</td>
</tr>
<tr>
<td>Deficient AB</td>
<td>-0.05 (0.03)</td>
<td>-0.04 (0.03)</td>
<td>-0.07 (0.03)*</td>
</tr>
<tr>
<td>Deficient EB</td>
<td>0.03 (0.03)</td>
<td>-0.05 (0.03)</td>
<td>0.03 (0.03)</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>-0.00 (0.03)</td>
<td>0.02 (0.03)</td>
<td>0.02 (0.03)</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>0.01 (0.03)</td>
<td>0.03 (0.03)</td>
<td>0.02 (0.03)</td>
</tr>
<tr>
<td>PSC</td>
<td>0.05 (0.02)*</td>
<td>0.01 (0.02)</td>
<td>0.02 (0.02)</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.15 (0.04)*</td>
<td>0.14 (0.04)*</td>
<td>0.21 (0.05)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>0.47 (0.04)*</td>
<td>0.38 (0.03)*</td>
<td>0.47 (0.04)*</td>
</tr>
</tbody>
</table>

*p = < .01

Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept
### Table 7.16
*A Model of Students Perceptions of Teacher Psychological Need Support and the Four Amotivation Dimensions Predicting Teacher Ratings of Student Effort, Effort Grade and Attainment Grade whilst controlling for PSC*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Teacher ratings of student effort</th>
<th>Effort grade</th>
<th>Attainment grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>4.09 (.09)*</td>
<td>3.76 (.08)</td>
<td>3.47 (.09)</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>.04 (.10)</td>
<td>-.00 (.09)</td>
<td>.01 (.10)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>-.02 (.12)</td>
<td>.08 (.10)</td>
<td>.04 (.12)</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>-.16 (.14)</td>
<td>-.20 (.12)</td>
<td>-.08 (.14)</td>
</tr>
<tr>
<td>Deficient AB</td>
<td>-.09 (.08)</td>
<td>-.01 (.07)</td>
<td>-.07 (.08)</td>
</tr>
<tr>
<td>Deficient EB</td>
<td>-.06 (.08)</td>
<td>.02 (.07)</td>
<td>-.13 (.08)</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>.01 (.09)</td>
<td>-.03 (.08)</td>
<td>-.01 (.09)</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>.03 (.10)</td>
<td>-.10 (.09)</td>
<td>-.01 (.10)</td>
</tr>
<tr>
<td>PSC</td>
<td>.01 (.06)</td>
<td>.01 (.06)</td>
<td>.05 (.06)</td>
</tr>
<tr>
<td><strong>Rate of change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-.14 (.02)*</td>
<td>-.02 (.02)</td>
<td>-.00 (.02)</td>
</tr>
<tr>
<td>Autonomy NS</td>
<td>-.02 (.03)</td>
<td>.02 (.03)</td>
<td>-.03 (.03)</td>
</tr>
<tr>
<td>Competence NS</td>
<td>.02 (.04)</td>
<td>-.00 (.03)</td>
<td>.04 (.04)</td>
</tr>
<tr>
<td>Relatedness NS</td>
<td>.01 (.04)</td>
<td>.01 (.04)</td>
<td>-.01 (.04)</td>
</tr>
<tr>
<td>Deficient AB</td>
<td>-.03 (.03)</td>
<td>-.05 (.03)</td>
<td>-.06 (.03)*</td>
</tr>
<tr>
<td>Deficient EB</td>
<td>-.01 (.03)</td>
<td>.02 (.07)</td>
<td>.02 (.03)</td>
</tr>
<tr>
<td>Insufficient TV</td>
<td>-.01 (.03)</td>
<td>-.03 (.03)</td>
<td>.01 (.03)</td>
</tr>
<tr>
<td>Unappealing TC</td>
<td>.01 (.03)</td>
<td>.03 (.03)</td>
<td>.01 (.03)</td>
</tr>
<tr>
<td>PSC</td>
<td>.02 (.02)</td>
<td>-.02 (.02)</td>
<td>-.01 (.02)</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student (u)</td>
<td>0.17 (.05)*</td>
<td>0.17 (.04)*</td>
<td>0.22 (.05)*</td>
</tr>
<tr>
<td>Residual (e)</td>
<td>0.50 (.04)*</td>
<td>0.39 (.03)*</td>
<td>0.49 (.04)*</td>
</tr>
</tbody>
</table>

*Note. AB = ability beliefs; EB = effort beliefs; TV = insufficient task values; TC = task characteristics; NS = need support; PSC = physical self-concept
*p<.01
Discussion

The present study investigated several questions pertaining to our understanding of amotivation in physical education. Importantly, the study advances existing findings of amotivation in the literature (Ntoumanis et al.; 2004; Shen et al.; 2010a; 2010b; Vlachopoulos, Katartzi, & Kontou, 2013) and the findings detailed in earlier studies comprising this thesis. These findings not only provide supportive evidence of the predictors of change in amotivation in PE, but also provide additional evidence into how the type of activity may alter amotivation over a school year. Moreover, peer motivational climate was explored as a predictor of change in students’ amotivation based on the qualitative findings reported in Study 3a and Study 3b and subsequently provides some of the first longitudinal evidence for the potential influence peers may have on students’ amotivated beliefs.

Amotivation across the school year

Although the overall mean scores were low, the results identified differences between the amotivation scores across the six different activities for each of the amotivation dimensions. Students reported feeling more deficient in ability and effort beliefs, and had higher insufficient task values in gymnastics, compared to the other activities. In the present study, students were taught a unit of gymnastics, which focused on developing the quality of basic floor skills such as handstands, cartwheels and forward rolls. Students often worked in pairs or small groups to develop these skills and a requirement at the end of the unit was to create a group routine linking the skills together with movement. This formed part of the students’ assessment at the end of the unit. Students would be required to perform their routines to others in the class, which was often a good opportunity to incorporate peer observation and self-evaluation into the lesson as required by the PE curriculum. The pressure of having to perform to others may cause some students anxiety, especially if they do not believe they are able in gymnastics. Gymnastics skills take a long time to master, and seeing progress amongst weaker students in a 6-week unit of work may be challenging for some teachers due to the attention students need to develop the correct technique. In addition, some students may not be confident to attempt some of the skills due to fear of injury, and are perhaps for this reason, turned off the activity and as a consequence are deficient in their effort beliefs.

The qualitative results reported in Study 3b also highlight deficient ability beliefs in gymnastics, due to one student reporting that she does not believe she has
the flexibility that is required in gymnastics and implied flexibility was a stable construct that would be difficult to change. Moreover, students valued gymnastics less due to reporting high insufficient task values compared to the other activities. This may be due to a lack of understanding for the reasons for being taught gymnastics skills, and how this activity relates to health and fitness. Teachers therefore need to make sure students can relate to the reasons why gymnastics is important, for example, focusing on the importance of flexibility and core strength, and providing links with other activities. Swimming was deemed as the most unappealing activity. In the present study, the students often devised a number of excuses for not taking part in swimming such as forgetting their swimming kit, menstruation, and illness. Records were kept by the PE teacher as to how many times a student had missed a swimming lesson within a unit of work. It was a requirement that each student had to attend at least 3 out of the 6 lessons, or they would have to attend swimming club at lunchtimes or after-school to make up the lessons they had missed. The question is: what makes swimming so unappealing to students? Is it the way it is taught? Are teachers lacking in confidence when teaching swimming and therefore plan lessons that are controlled and authoritarian due to safety concerns? Alternatively how influential is the peer motivational climate in swimming? It can be argued that peers may be less supportive in swimming due to having their heads submerged underwater and therefore provide less encouragement to each other. Interestingly, the mean score for perceptions of autonomy support in swimming was low compared to competence and relatedness support suggesting the students do not feel they had much choice and/or volition in the lesson.

Considering the significant decrease in physical activity in female adolescents, reported in chapter 1 (HSE, 2012a), physical educators must pay more attention to the activities in which students lack interest and consider modifying the PE curriculum to encapsulate student interest (Wallhead & Buckworth, 2004). For example, teaching swimming strokes could be incorporated into activities such as lifesaving, synchronised swimming and water polo, which may be perceived to be more appealing.

**Interrelationships among amotivation dimensions**

To date, the literature on amotivation has supported the four dimensional conceptualisation of amotivation (Shen et al; 2010a, 2010b; Study 1; Study 2), suggesting there may be more than one source that leads a student to become
amotivated. Students who are amotivated in PE therefore can be classified under four dimensions of amotivation; their ability beliefs, their effort beliefs, the values they place on tasks and the characteristics of the task. However, no study to date has explored the predictive utility of the four amotivation dimensions with each other. In other words, does an individual have to demonstrate all four categories of amotivation in order to be amotivated? Or can an individual demonstrate one or two dimensions primarily, which in turn may significantly predict the development of the remaining amotivation dimensions? The present study aimed to investigate the latter questions. The results partially support the initial hypothesis by demonstrating that at the start of the study, deficient ability beliefs and deficient effort beliefs positively predicted insufficient task values, however in contrast to the initial hypothesis only deficient effort beliefs predicted unappealing task characteristics at the start of the study and over the school year. Ability and effort beliefs may be regarded as internal factors, which can be perceived as being stable and less malleable within the PE environment. Task values and the characteristics of the task can be argued as being situational factors, which are less stable and can be changed more readily. Therefore, it would make sense to hypothesise that ability beliefs and effort beliefs will be more likely to have an effect on values of the task and characteristics of the task rather than vice versa. The present findings highlight that those students who do not believe in their ability and/or do not believe they can sustain the effort required of them to perform a task, may value the task less as a result. Moreover, an increase in low effort perception for a particular activity may result in an individual finding the activity increasingly unappealing over time. The consequences may be students opt for more sedentary roles and display avoidance behaviours such as faking injury, forgetting PE kit and low attendance. Supporting our assumption that deficient ability and effort beliefs are perhaps more stable constructs than insufficient task values and unappealing task characteristics, further analyses in the present study found the latter amotivation dimensions failed to predict change in deficient ability and effort beliefs over time. More research needs to be conducted before making any concrete conclusions, but the implications for PE teachers is, those students who enter secondary school not believing in their ability and/or their levels of sustained effort to succeed, may take longer to change their beliefs in the PE environment. The type of activity and perceived value of the activity may not be sufficient enough to change their preconceived beliefs, stemming perhaps from PE experiences in primary school. Other
situational variables such as teachers’ support of students’ psychological needs may have more of an influence in encouraging change (Study 2).

**Amotivation and predictors of change in the outcome variables**

In contrast to Shen and colleagues’ study (2010b), no interactions were found between the amotivation dimensions and student effort. In the present study, student effort was rated by the PE teacher at the end of each unit of work (each activity) by asking teachers to rate for example, whether students ‘gave up easily on tasks’. Students were also awarded an effort grade that corresponded with the effort grading system used by the school. The PE teacher repeated this process after every activity, subsequently providing evidence of students’ effort over time. Shen et al also asked teachers to rate student effort, but as an overall rating for PE, as opposed to individual activities. As a consequence only one score was obtained at one time point, which is therefore difficult to assess whether the teachers’ perception of effort was truly reflective of students’ effort across all the different activities. By asking the teacher in the current study to not only rate the students’ effort per activity but to also provide an effort grade we can assess the co-linearity of these two variables to improve observer reliability. Correlations between teacher ratings of student effort and effort grade were shown to be significantly positive in all of the activities. In addition, Shen et al (2010b) found all the amotivation dimensions inversely correlated with in-class effort, however this study found inverse dimensions inversely correlated with in-class effort, with deficient ability beliefs being the only amotivation dimension to negatively correlate with either teacher ratings of student effort and/or effort grade in all of the activities. Moreover, Shen et al found the amotivation dimensions only explained 17% of the variance of in-class effort suggesting that other situational variables may be influencing student effort behaviours. Upon further analyses in the present study exploring the amotivation dimensions as potential predictors of teacher ratings of student effort and effort grade, we found amotivation did not significantly predict either of the latter variables at the start of the study or over time. Due to past research highlighting student engagement as being a key marker of effort exertion and a determinant of a students’ motivational state (Skinner et al, 2009), one would expect to find amotivation as a significant negative predictor of student effort. However, the lack of significant findings may be due to the complexity of the PE context and the school environment. In a PE lesson, amotivated students may be less inclined to challenge teachers’ instructions by refusing to co-operate in lessons. They perhaps
know the teacher is watching them closely, and they know the repercussions that may occur if they fail to participate in the lesson. Teachers also use strategies to encourage low motivated students by perhaps pairing them with students who are more motivated. Such strategies may help avoid situations where low motivated students go ‘off task’ and/or ‘give up easily’ in challenging situations. Thus, the structure of the PE lesson, enforced by the teacher, may conceal students’ true feelings and thoughts regarding PE. Moreover, teachers may perceive students to be ‘giving up easily’ when in fact this is not the case. Teacher ratings may therefore be too subjective and unreliable. The disparity between the students’ amotivation scores and teacher ratings of student effort may be explained by the fact that students’ amotivation was measured using self-report questionnaires but students’ effort was measured by the teachers. In light of these findings, future research should measure students’ ratings of their effort after each activity alongside teachers’ scores to improve reliability of the data. There is no doubt that amotivation may impede in-class effort in PE activities but more research needs to be conducted using a combination of methods to measure student effort, such as teacher observation, effort grade, self-reports and video evidence, as well as formulating more specific criteria in which to determine what ‘effort’ looks like in PE.

Consistent with Study 1, an association was found between deficient ability beliefs and attainment grades. In the present study changes in deficient ability beliefs was the only amotivation dimension to negatively predict change in attainment grades over the school year. In other words, if a student increasingly believed they do not have the ability to succeed, then their progress in PE deteriorated.

There is very limited research exploring the relationship between motivation and attainment grades in PE, however a recent longitudinal study provided supporting evidence for the negative relationship between amotivation and attainment in PE (Barkoukis, Taylor, Chanal, & Ntoumanis, 2014). Barkoukis and colleagues assessed attainment and motivation at six different time points over three school years amongst 354 students from five schools who were aged 12 at the start of the study and 14 when last assessed. The results showed an increase in student amotivation resulted in lower PE grades. However, amotivation was investigated alongside the other motivational orientations and as a one-dimensional construct. No research to date other than the present study has explored the multidimensionality of amotivation with attainment grades in PE. In addition, Barkoukis et al (2014) conducted their study in Greece,
which follows a different method of assessment than teaching practice in the UK, but continues to highlight limitations of assessment methods used in PE across Europe.

The present study aimed to standardise assessment methods amongst PE teachers by devising a specific method of assessment criteria for each activity in which all PE teachers were expected to follow. In addition, the PE teachers and the researcher occasionally assessed students in the PE lessons together, and then cross-referenced grades to increase reliability of the assessment method. In light of this, assessment in PE still needs to be made more objective and standardised across the PE curriculum in the UK and in Europe. Grading systems currently fail to cover the range of different aspects of students’ performance in PE (Barkoukis et al 2014).

**Perceptions of psychological need support predicting change in the amotivation dimensions and the outcome variables**

Previous research in psychological need support and amotivation has found significant associations between student perceptions of teachers’ autonomy, competence and relatedness support and the four subtypes of amotivation (Shen et al; 2010b). The findings of the present study are consistent with this as none of the three psychological needs predicted all four subtypes. However, the present study found there were differences in the predictive utility of some of the need support variables and the amotivation dimensions. For example, we found perceptions of autonomy support predicted two subtypes of amotivation: deficiency in effort beliefs and unappealing task characteristics, whereas Shen and colleagues found autonomy support did not directly impact on any of the amotivation dimensions and thus was removed from the study. Teachers’ competence and relatedness support was found to predict three subtypes of amotivation: deficiency in ability beliefs, deficiency in effort beliefs and unappealing task characteristics but did not predict insufficient task values. Once again, these results differ slightly from Shen et.al who found perceptions of relatedness support predicted deficiency in ability beliefs and insufficient task values, but not unappealing task characteristics, and competence need support predicted all four subtypes. Overall, the inconsistent findings demonstrate the complexity of amotivation in varying situations. Measuring amotivation and perceptions of need support at one time point may not capture true relationships between these two variables. Moreover, other situational factors may explain discrepancies in the findings. For example, the type of school and cultural factors may contribute to different teaching styles and subsequently differing perceptions of psychological need.
support. For example autonomous styles of teaching may be operated in different ways in different cultures, similarly with the ways in which teachers provide feedback and show empathy and understanding.

Results from the conditional models displaying the psychological needs of support as predictors of change in amotivation over time found changes in autonomy need support was the only significant negative predictor of change in deficiency in ability beliefs. However, due to net suppression resulting in measuring autonomy need support as a single predictor, we can not be sure that the impact of autonomy support on deficient ability beliefs is direct and not mediated by competence and relatedness need support. Nevertheless, the results support research showing the importance of an autonomy supportive environment in enhancing students’ self-determination in PE (Taylor & Ntoumanis, 2007). Changes in autonomy and competence need support were the only significant negative predictor of change in insufficient task values and unappealing task characteristics. In other words, the results suggest over the course of the school year, an increase in teachers’ autonomy and competence support would lead to students valuing PE activities more and finding the activities and tasks more interesting. This makes sense, as one would expect students who feel they have more choice over the decisions they make to, over time, begin to value the underlying reasons for why they are making those decisions in the first place. Similarly, an increase in volition will no doubt increase the appeal of the task. Competence need support has also been viewed in the literature as being one of the key needs alongside relatedness need support, and if both are thwarted, amotivation is likely to occur (Ryan & Deci, 2002) with or without autonomy support. Shen and colleagues (2010b) found competence need support to be the strongest predictor of amotivation. Our results also partially support this finding as either competence need support or relatedness need support were the strongest predictors of all four amotivation dimensions at the start of the study.

Due to the effects of net suppression, need support was also analysed in the results as a composite variable as opposed to exploring the effect of autonomy, competence and relatedness need support separately. The limitation of this is we were unable to decipher which of the three needs was having the most influence on the amotivation dimensions. Nevertheless, the findings coincided with the results above with need support negatively predicting deficiency in ability and effort beliefs and unappealing task characteristics at the start of the study. Over the school year, results
still highlighted a change in need support predicted an inverse change in insufficient task values. Thus, if students feel the teacher is supporting their three psychological needs in PE, over time they are most likely going to value the activities more. The importance of the construct ‘task value’ has been supported in the literature as being significant in driving student engagement. Students’ purposes for doing an activity have been of particular interest to researchers to aid in our understanding of student engagement in the educational setting. Findings have shown that students who do not see a purpose in doing an activity would probably not do it, even if they believed they had the capabilities of doing so (Wigfield & Eccles, 1992; Wigfield, Tonks, & Klauda, 2009).

Constructs that have been associated with students’ purpose for doing an activity are achievement values, goal orientations and interest (Pintrich, 2003). Achievement values have been extensively studied by researchers within the area of achievement motivation (Eccles et al, 1993; Higgins, 2007). Eccles and her colleagues proposed an expectancy-value model, which hypothesised that expectancies and values would directly influence task choice and performance. The model proposes that values are influenced by task specific beliefs such as perceived competence on a task, perceptions of task difficulty, individual goals and past achievements. The expectations and perceptions other individuals such as parents, teachers and peers have on individuals’ beliefs, goals and achievements subsequently may also affect the task value. Higgins (2007) defined task value as the psychological experience of being attracted to an activity, and deemed ‘value’ to be a motivational force, as the qualities of a task will influence individuals’ desire to do the task (Eccles et al, 1983; Eccles, 2005). Although no studies in PE have explored the relationship between task values and perceptions of need support, expectancy-value theory suggests the expectations and influence of social factors such as peers, parents and teachers may contribute to whether students perceive the activity to have purpose.

Students’ perceived psychological need support was not found to be a reliable predictor of teacher ratings of student effort, effort grade or attainment grade at the start of the study or over the school year. However, significant, albeit slightly weak, positive correlations were found between autonomy, competence and relatedness need support in some of the activities with the outcome variables, suggesting need support may indeed have some influence over student’ effort and attainment grades, but further research is needed to explore the relationships further. Due to the subjectivity
of teachers’ assessment of students’ effort and attainment in PE, there is likely to be discrepancies between students’ perceptions of need support and teachers’ perceptions of behavioural outcomes. In other words, students may feel their needs for autonomy, competence and relatedness are supported in PE but there are a number of additional situational factors that may affect their behaviour in particular activities. For example, a student may be paired or grouped with other students who may influence how much effort they exert in the lesson, either through unnecessary distraction, or perceiving themselves as having lower ability compared to their partner or group. This may subsequently deter them from certain tasks, or being paired with lower ability students may compromise the true ability of the student being demonstrated in lessons. It is important, therefore, that teachers group students carefully and appropriately in PE lessons to ensure fair assessments are made to reflect every student’s ability in every activity.

**Peer motivational climate dimensions predicting change in the amotivation dimensions and the outcome variables.**

The findings of Study 3a and Study 3b provided substantial evidence of the influence peers might have on student amotivation in PE. Therefore, it was deemed necessary that relationships between the peer motivational climate and amotivation be explored further. The present study is the first study to date that has investigated peer motivational climate with the amotivation subtypes and therefore no direct hypotheses were made. The findings showed that at the start of the study, peer improvement positively predicted insufficient task values and unappealing task characteristics. Peer relatedness negatively predicted insufficient task values, meaning if students feel supported by their peers in the PE lesson, and feel their opinions are valued, students will value the activity they are doing, and perhaps see the activity as having more of a purpose. Finally, the results showed peer effort to negatively predict deficient ability and effort beliefs and unappealing task characteristics. The results suggest that if students are encouraged by their peers to try hard and persist after failure, students’ beliefs in their ability will increase. However, the results found change in peer effort did not predict change in deficient ability beliefs over time. This finding may be due to a number of factors. At the start of the study (beginning of the school year), students were participating in either netball or gymnastics, but over the school year, the activities changed every six weeks, and therefore the type of activity may have affected the influence of peer effort. An additional influencing factor may be the
teaching style. Although students were taught by the same teacher in all of the activities, teachers may have adapted their teaching style depending on the type of activity and the equipment and facilities available. Finally, the PE teacher is very much in control of peer interaction, and the way they group students in one activity may be different to how they group students in another. Thus, at the start of the year, students may be in a group which is highly engaged, works hard and encourages effort, explaining the significant relationship between peer effort and the subsequent amotivation subtypes. If the groups change over time across different activities, this may help explain the non-significant rate of change in amotivation.

Over the school year, change in peer improvement negatively predicted change in deficiency in effort beliefs, insufficient task values and unappealing task characteristics, suggesting that students who feel their peers are helping them improve their skills, and are co-operating with their classmates in order to further develop their skills, will increasingly believe they have the effort to persist on the task, will value the activity and perhaps be more engaged due to finding the task more appealing. However changes in peer improvement did not predict change in deficiency in ability beliefs perhaps supporting the assumption that ability beliefs are perceived by individuals to be more stable, and as a result it may take longer before a student begins to increase their perceptions of ability (Nicholls, 1989). Thus, longitudinal research that aims to track students from Year 7 to Year 9 would be useful to explore whether an increase in peer improvement can predict a decrease in deficiency ability beliefs, over a longer time period. The findings, however, highlight to teachers the influence peers may have on an individual within a group. It is imperative that teachers spend time planning how to group students to select groups that will co-operate with each other and support one another on improving and developing skills, especially if working with amotivated students.

Interestingly, the only other peer motivational dimension to predict change in the amotivation subtypes was intra-class conflict. The results showed that an increase in intra-class conflict predicted a significant increase in deficiency in ability beliefs. Intra-class conflict displays a negative environment pertaining to peers making negative comments about one’s ability and laughing at others’ mistakes (Vazou et al, 2005). It would, therefore, seem reasonable to suggest based on these results, that if intra-class conflict continues in a PE lesson, then an amotivated student will continue to believe they do not have sufficient skills and ability to succeed. Significant others in
the PE lesson may be reinforcing an individual’s own negative beliefs about their ability and as a result may also affect self-determination. The impact of peer influence on amotivation may be more significant than teacher need support. Even if a student felt the teacher was supporting their psychological needs, peers may be a significant situational factor in determining maladaptive behavioural outcomes. More research is needed on the effect of peers, not only the amotivation dimensions, but also on the different motivational constructs that encompass an individual's self-determination.

The results of further conditional models found that some of the peer motivational climate dimensions predicted initial teacher ratings of student effort, effort grades and attainment grade ratings over the school year. Intra-class conflict was shown to positively predict teacher ratings of student effort and attainment grade at the start of the study, but an increase in intra-class conflict over time predicted a decrease in attainment grades over time. An explanation for this may be due to the fact time 1 represents measurements taken after the first unit of work in a particular activity. Students have only experienced six weeks at secondary school and may still be getting to know one another; therefore some students may overlook negative comments. Another possibility is that any negativity from classmates may initially make some students more determined to succeed. In competitive situations, weaker students may try even harder to avoid negative comments and as a result achieve higher on effort and attainment. Conversely, over the school year, persistent negativity from one’s peers may be increasingly detrimental on students’ amotivation. At the start of term, students may try hard to ignore negative comments but if negativity persists in the PE lessons, especially regarding students’ ability and performance, motivation may decline (Vazou et al, 2005). The results of the present study showed that an increase in intra-class conflict over time predicted an increase in deficiency in ability beliefs, supporting the explanation as to why attainment grades decreased. Research has also found ‘athletic competence’ to be an important determinant in youth social status and the existence of friendships (Chase & Dummer, 1992).

The results in the present study also found an increase in peer relatedness predicted a decrease in effort grade. Surprisingly, this means that the more a student feels supported and accepted by their peers within PE and perhaps feels her opinions are acknowledged, is graded less by the teacher for effort. Peer relatedness therefore may have a negative influence on behaviour as students become overly influenced by their peers and pressured to behave in certain ways to conform to the majority. For
example, if one’s peers decide not to try hard in lessons and adopt a relaxed attitude during tasks and competitive games, an individual may follow suit for fear of being excluded from the group outside of PE, as a result the teacher may award them a low grade for effort. Smith (1999) found higher perceptions of close friendships were associated with more ‘positive physical activity affect’, which encompasses enjoyment. The influence significant others have on student motivation is complex, and more research is required on peer influence and the positive and negative effects they can have on student motivation in physical education. The role of peers has certainly been seen in the literature as being extremely important to female students’ continued participation in physical activity (Coakley & White, 1992).

**Limitations and future directions**

This study had several limitations, which must be acknowledged. The first was that the overall sample was low in amotivation. Students in Year 7 (age 11) enter secondary school with excitement about being taught new activities and having more choice (see Study 3a and 3b). Students, therefore, may be more motivated in this year group and try harder in lessons perhaps to please the specialist PE teachers who in some cases are perceived to be far stricter than primary school PE staff (Study 3a). There may be one or two students who were highly amotivated within the sample and would benefit from case study research, but when exploring amotivation amongst a year group, perhaps one would not expect high mean amotivation scores, especially in Year 7, who are still developing their values, attitudes and perceptions towards the subject. However, what is important in the present study is the findings identified variables that significantly predicted change in students’ amotivation scores over time. For example, the finding that students’ perceptions of competence need support form the teacher significantly decreased some of the amotivation subtypes, together with the peer motivational climate dimensions, suggests that situational variables in the PE context may be hugely influential in altering students’ motivation. Given this is the first examination of peer motivational climate and amotivation, there is a need for future research to investigate these relationships longitudinally by tracking students throughout secondary school.

A second limitation concerns the pedagogical environment within PE. Due to the constraints of the school timetable, different PE teachers taught the students in this study. Although individual students had the same teacher throughout the year, students’ perceptions of psychological need support from one teacher may be different
to another student’s perceptions of another teacher. Similarly, teachers may have
different teaching styles, perhaps depending on teaching experience, and this can also
have affected students’ scores on the questionnaire. Furthermore, due to facility
accessibility, students were taught different activities at different time points. For
example, two classes were taught PE at the same time, and due to availability of space,
each class was taught a different activity. Thus, the order in which students
participated in the different activities may have also affected their amotivation scores
(see Table 7.1). Some classes for instance would have been taught netball outside
towards the end of the year when the weather was much colder. Others may have had
the opportunity to be taught netball inside, or in the earlier months when the weather
was warmer. Therefore, students’ experiences and perceptions of netball may change
depending on the situation, and this may have an impact on their motivation. Although
this is seen as a limitation of the present study, it represents real-life situations within
schools, and highlights the complexity of studying amotivation in a PE environment.

Pedagogical strategies were proposed by Ntoumanis and colleagues (2004) to
try to reduce amotivation and subsequent negative behavioural outcomes. Examples
of these strategies were: 1) to create more task variety and challenge in lessons to
reduce boredom amongst amotivated students, 2) to allow students to work in small
mixed groups 3) to share responsibilities between teachers and students and 4) to
provide more supportive and critical feedback. Siedentop (1994) devised the sport
education model as a way of presenting sport in the curriculum in a more positive light
and to allow sport activities to have more meaning and value for students. The primary
aim was to use an instructional model to motivate students and increase participation.
Perlman (2010), utilising the sport education model on an amotivated sample of
students, showed that sport education significantly increased perceptions of enjoyment
and relatedness satisfaction.

In addition the present study used a relatively small female sample from an
independent girls school, and therefore it is difficult to generalise the results to male
students and students who are taught in mixed comprehensive schools and/or PE
classes. However, the importance of conducting research on young females has been
emphasised by researchers e.g; Wallhead & Buckworth (2004), due to levels of
physical activity decreasing more than boys during adolescence. The Women’s Sport
and Fitness Foundation (WSFF, 2012) has recently produced a report based on
research to examine the reasons why girls in the UK were becoming increasingly
inactive. Research found that the decrease was over a period of time, resulting in gradual student disengagement. Significant declines in students’ participation levels among girls were more profound in Years 8 and 9 suggesting more research needs to be conducted prior to Year 8 so interventions can be put in place sooner, before students become increasingly disengaged throughout secondary school and beyond.

An additional variable that could have been measured in the present study for the benefit of our understanding of amotivation is students’ physical activity (PA) levels throughout the school year. It would be interesting to discover whether students PA declines alongside decreases in amotivation in PE and relative to specific activities.

In conclusion, the present study provides new insight into variables that may predict changes in amotivation dimensions over a school year. The results highlight the importance of students’ psychological needs being supported in PE to decrease amotivated behaviours, emphasising the importance of autonomy and competence need support in predicting change in either insufficient task values and/or unappealing task characteristics. The results also emphasise the significance of peers in the PE climate and their potential influence on students’ amotivation. More research is welcomed to explore the relationships between peer motivational climate and amotivation dimensions. Finally, this study provides research evidence from a naturalistic PE setting in which adolescent students and teachers in schools across the UK can relate to. The evidence derived from this study has also drawn attention to practical implications for PE teachers, highlighting the importance of need supportive teaching as well as grouping students appropriately.
Chapter VIII

General Discussion
It is extremely important to have more of an enriched understanding of why some students are amotivated in physical education. Researchers, health practitioners and teachers actively seeking to understand rises in obesity levels among adolescents in the UK, need to understand ways in which to intervene and subsequently influence the level of physical activity young people engage in on a daily basis. Although there is an increasing body of evidence examining motivation and engagement in PE, there remains a limited amount of knowledge and understanding concerning amotivation and the possible antecedents and consequences of amotivated behaviours. Considering the reported decline in young people’s physical activity participation in adolescence (Physical Education and Sport survey, 2013/14), and the important role PE has in influencing young people’s attitudes towards physical activity (Biddle, 2001), understanding why students are not motivated to participate in PE is imperative. Grounded in self-determination theory (Deci & Ryan, 1985), this thesis aimed to address these limitations by examining: the multidimensionality of amotivation, the relationships of amotivation to socio-contextual variables and possible outcomes associated with the amotivation dimensions. To achieve these aims, four research studies were completed which utilised both qualitative and quantitative methods.

The following section provides a brief overview of the main findings in all four studies, followed by a detailed discussion about the main findings in relation to past research. Subsequently, the chapter focuses on the theoretical, empirical and practical implications of the research before focusing on the limitations and future directions. The final section draws the thesis to a close by detailing the main conclusions drawn from the research.

Summary of main findings

Study 1: Amotivation in Physical Education: Relationships with Physical Self-concept and Teacher Ratings of Attainment. This study aimed to assess the reliability and validity of the AI-PE and identify relationships between students’ amotivation, physical self-concept and attainment levels. The findings from this study supported the validation of the AI-PE in PE and supported the multidimensional structure of amotivation through the results of the CFA, concluding the AI-PE is a reliable measure of amotivation in the PE setting. Within Study 1, emotional and behavioural engagement and disaffection were also examined to further explore the validity of the AI-PE, and correlational analysis provided additional support for the AI-PE as hypothesised. Furthermore the findings identified deficiency in ability
beliefs to negatively predict physical self-concept when controlling for age and gender, and positively predicted attainment.

**Study 2: The Effect of Perceived Psychological Need Support on Amotivation in Physical Education.** This study aimed to explore the influence of social agents on the four amotivation dimensions over time. Due to the significant relationship identified in Study 1 between deficiency in ability beliefs and PSC, Study 2 controlled for PSC in the analyses in order to determine the extent to which students’ perceived need support predicted the amotivation subtypes. Across the whole sample of students, changes in amotivation were non-significant over time, whereas perceptions of autonomy need support showed a significant increase, and perceptions of competence and relatedness need support, a significant decrease. Perceived teacher support for autonomy, competence and relatedness negatively predicted students’ initial status on insufficient task values and unappealing task characteristics, and competence need support negatively predicted initial deficiency in ability beliefs. Students’ perceptions of teacher need support for all three needs negatively predicted changes in students’ unappealing task characteristics but did not predict change in the other amotivation dimensions.

**Study 3a: Understanding Amotivation in Physical Education Across the Transition from Primary to Secondary School.** Study 3a used a qualitative approach to provide a more detailed examination of amotivated students’ experiences in PE in the primary school setting, and their expectations about PE in secondary school. The findings from this study demonstrated the existence of the amotivation dimensions through students’ self-reporting perceptions of low ability, low effort, lack of value and knowledge of the specific PE activities, and the unappealing activities offered. Study 3a also further supported the importance of PSC, the role of the teacher in supporting the three psychological needs, and highlighted the role of peers as being an additional socio-contextual factor that may influence amotivated behaviours. This study also identified that students uphold many anxieties and concerns in PE across the transition from primary to secondary school.

**Study 3b: Understanding Amotivation in Physical Education Across the Transition from Primary to Secondary School: A Longitudinal Perspective:** This study aimed to first replicate Study 3a to provide additional supportive evidence of the findings, and to second explore changes in amotivation across the transition from primary to secondary school. The findings of Study 3b initially replicated the findings
of Study 3a concerning students’ experiences of PE in primary school, and the identification of the amotivation subtypes, PSC, and the significant role of the teacher. The peer motivational climate was highlighted once again as being extremely important in shaping students’ positive experiences in PE.

**Study 4: Changes in Amotivation Across Different Activities: A Longitudinal Perspective:** The aims of this study were first to examine changes in the four amotivation dimensions across a number of different activities in PE, and second to explore potential predictors of change over a school year. Differences were found in the amotivation scores for each of the dimensions across six activities. Deficient ability beliefs, deficient effort beliefs and insufficient task values were higher in gymnastics compared to the other activities, and unappealing task characteristics were higher in swimming. Interrelationships were found between the amotivation dimensions as deficient ability beliefs and deficient effort beliefs positively predicted insufficient task values, and deficient effort beliefs positively predicted unappealing task characteristics. No interactions were found between the amotivation dimensions and student effort, but deficiency in ability beliefs negatively predicted change in students’ attainment grade. Students’ perceptions of teachers’ autonomy, competence and relatedness need support negatively predicted deficiency in effort beliefs and unappealing task characteristics at the start of the year, with perceptions of competence and relatedness need support also predicting deficiency in ability beliefs. Students’ perceptions of autonomy need support negatively predicted changes in deficiency in ability beliefs and insufficient task values over time. Additionally, an increase in students’ perceptions of competence need support predicted a decrease in students’ insufficient task values and unappealing task characteristics over the school year. Perceptions of relatedness support did not predict change in any of the four amotivation dimensions. Students’ perceptions of teacher psychological need support did not predict teacher ratings of student effort, effort grade or attainment grade at initial status or over time. At the start of the study, students who perceived their peers to be helping them improve on tasks reported lower scores on insufficient task values and unappealing task characteristics. Students who felt a sense of belonging with their peers reported lower scores on insufficient task values, and students who felt their peers encouraged them to put effort into the activities reported lower deficient ability beliefs, deficient effort beliefs and unappealing task characteristics. Intra-class conflict predicted higher scores in deficiency ability beliefs. Over time, an increase in students’
perceptions of peer improvement predicted a decrease in deficiency in effort beliefs, insufficient task values and unappealing task characteristics. In addition, an increase in intra-class conflict predicted an increase in deficiency in ability beliefs. Intra-class conflict was the only peer motivational climate dimension that positively predicted teacher ratings of student effort and attainment grade at initial status. However over time, an increase in students’ perceptions of peer relatedness predicted a decrease in students’ effort grade and an increase in perceptions of intra-class conflict predicted a decrease in students’ attainment grade.

**Conceptualisation of amotivation**

In Chapter II it was revealed that Legault and colleagues devised the first known quantitative measure of amotivation in an academic setting, named the Academic Amotivation Inventory (AAI). As PE provides a very different contextual setting to other academic subjects, Shen et al (2010a) adapted the AAI so that amotivation could be reliably measured in a PE environment. The Amotivation Inventory in PE (AI-PE) was validated as a reliable measurement tool of the four amotivation dimensions (Shen et.al, 2010a). The first study in this thesis aimed therefore to test the reliability and validity of the AI-PE, and confirmatory factor analysis supported the factorial validity of the four dimensions of amotivation, indicating high reliability for the measure. The AI-PE consequently has been used throughout all the studies in this thesis. Study 3a and 3b also provided support for the four amotivation dimensions, as the findings from the qualitative analyses illustrated amotivated students often described themselves and their experiences in PE using the four amotivation sub-types.

The development of the AI-PE makes an important contribution to sport and exercise psychology research as it provides a theoretically sound and reliable measure of amotivation in the PE setting. The four amotivation dimensions arose from research by Legault and colleagues (2006) who ultimately drove researchers to want to understand the amotivation subtypes further. However, the development of the multidimensionality of amotivation is a fairly new and under researched model, and as a result lends researchers to question whether the four subtypes are the sole indicators of amotivation or whether there are other indicators such as low need satisfaction and high social evaluation e.g. body image and social comparison (Ntoumanis et al, 2004). Moreover, questions also need to be asked regarding how the AI-PE is defining an individual as amotivated. For example: Does a student need to report an average score
above the midpoint on all of the four dimensions in order to be classified as amotivated? Is it possible for a student to score highly on two out of the four dimensions and not display amotivation? In other words, a student may report a high score for deficient ability beliefs and insufficient task value but still find the activity appealing and subsequently put effort into succeeding in the activity. It may be difficult therefore for PE teachers to truly indentify and/or observe what an amotivated student looks like. However, Study 4 aimed to shed some answers to the above questions by exploring the interrelationships between the four dimensions of amotivation. The results provide evidence that deficiency in ability and effort beliefs can positively predict insufficient task values, and over time. The more a student lacks the belief that they do not have the effort required to fulfill a task, the more the task will become uninteresting and unappealing, perhaps leading to boredom and drop out from the activity. Therefore it appears likely that if a student lacks beliefs in their effort, then over time this may have an effect on their attitudes towards the task. Additionally, the results highlight a possible ‘snowball effect’ between the four dimensions, whereby scoring highly on one dimension may lead to high scores on another over time. Nevertheless, the interrelationships between the amotivation subtypes need to be explored further, on a larger sample size, to gain a more comprehensive understanding.

The stability of deficient ability beliefs might be more complex than that of the other amotivation dimensions. Study 2 found no variables predicted change in deficient ability beliefs, and findings from Study 4 identified perceptions of autonomy need support to be the only predictor of change in deficient ability beliefs. In addition, we found an increase in deficient ability beliefs predicted a decrease in attainment grade. Unfortunately comparisons cannot be made with findings from existing empirical research, but possible reasons for non-significant findings in rate of change may be due to ability beliefs being a more stable and less malleable construct. Study 3a and 3b support this view, as students frequently reported ‘not being very good’, and implied they had accepted their lack of ability as one of their traits that could not be changed. The assumption has been that children who perceive their ability to be stable may develop long-term implications such as negative self-evaluations (Dweck & Leggett, 1988). According to Dweck and her colleagues (Dweck, 1999; Dweck & Leggett, 1988), some individuals view ability as a fixed entity that cannot be changed. These individuals tend to be performance orientated, and often compare themselves
and their ability to others. Entity or fixed beliefs have been identified in past research with less adaptive motivational profiles, particularly in girls (Wang & Biddle, 2001). In comparison, some individuals hold incremental beliefs about their ability, viewing ability as an acquired skill that can be changed with increased practice and effort. They tend to be task orientated, focusing on learning and development of skills (Dweck, 1999). Incremental beliefs have been associated with intrinsic motivation in PE (Wang & Biddle, 2001). Research has also shown that students with entity beliefs often attribute failures in sport to their ability (Spray et al, 2006) which may as a result increase their deficiency in ability beliefs and in turn increase their amotivation. However, Dweck (1999) proposed individuals have a preference for one belief over another. Situational factors may influence such preferences and therefore the PE teacher should aim to increase students’ incremental beliefs by planning lessons that focus on self-improvement of skills.

**The influence of the teacher on amotivation**

Previous research in education has examined the role of the teacher in predicting various outcomes. Research has examined the roles of teachers’ need supportive behaviours, and the effect such behaviours have on students’ motivation in lessons. Support for individuals’ three psychological needs for autonomy, competence and relatedness are grounded in self-determination theory (Deci & Ryan, 2000), a theory widely tested and researched in physical education. The research completed within this thesis aimed to examine whether students’ perceptions of autonomy, competence and relatedness need support (Study 2, 3a, 3b & 4) can predict a change in amotivation, and the outcome variables such as effort and attainment. Previous research exploring amotivation and need support in PE have used cross-sectional designs (Shen et al; 2010b), however this thesis used longitudinal designs in order to investigate whether perceptions of psychological need support can predict change in the amotivation dimensions. The results indicated that the teacher is a key influential figure in shaping students’ perceptions of their ability, effort, interest and value of the task. In Study 2, the findings suggested that if students perceived the teacher to provide inadequate support for their basic psychological needs, then over time PE tasks might become less appealing. However perceived need support did not predict deficiency in ability beliefs, deficiency in effort beliefs and insufficient task values over time. However Study 4 only partially supported these findings as only changes in autonomy and competence need support negatively predicted unappealing task
characteristics, not relatedness, and changes in autonomy and competence need support also predicted change in insufficient task values. Furthermore, changes in autonomy need support negatively predicted changes in deficiency in ability beliefs. This discrepancy between findings in Studies 2 and 4 attests to the need for future research before any firm conclusions regarding the predictive utility of psychological need support on amotivation can be drawn. There are several reasons that could account for these differences such as individual characteristics, class sizes and/or facilities available, which all may change students’ perceptions of the teacher. These reasons remain speculative until further research is conducted, but it is important to consider the complexity of PE pedagogy within different schools. For example, Study 2 was carried out in a boys’ grammar school, whereas Study 4 was carried out in a girls’ independent boarding school. Additionally, Study 2 was carried out over a six-week unit of work in one activity compared to Study 4, which was conducted over a whole school year across six activities. The students also differed in age and gender, which may have affected the interpretation of some of the questions on the AI-PE, and the teachers also differed in age and gender, which may have contributed to different teaching styles due to differing levels of experience, and therefore different perceptions of psychological need support may have been experienced by students. Attempting to compare the results and draw generic conclusions is therefore problematic, and emphasises the complexity of studying amotivation in different contexts. Our results from the first time point are also inconsistent with the findings from Shen et al (2010b), as they found no relationship between perceptions of autonomy support and amotivation, leading to the removal of autonomy support from their analysis. Nevertheless, collectively the results in Study 2 and Study 4 suggest students’ perceptions of psychological need support have an effect on the amotivation subtypes, even though the results differ on which of the three psychological need supports predict the four amotivation dimensions.

Study 3a and 3b support the importance of psychological need support from the teacher by identifying key themes from amotivated students’ self-reports relating to reasons why they may be amotivated in PE. In Study 3a, students made reference to: autonomy support when voicing their opinions on the lack of control they felt they had when making decisions; competence support through discussions about being judged on their performance; and relatedness support due to reporting about the importance of kind and empathetic teachers. Ntoumanis et al (2004) also found
support for inadequate need support from the teacher being a primary cause of amotivation. For example Ntoumanis and colleagues found lack of autonomy support led to amotivated behaviours with particular focus on lack of volition and choice of activities. Research has also shown lack of autonomy to be associated with student dissatisfaction and amotivation in PE (Chen, 2001; Ntoumanis, 2002).

This thesis has provided evidence that inadequate perceptions of need support are particularly influential in determining one or more of the amotivation subtypes. The results of Study 2 and 4 in particular suggest that the three forms of needs support may be more influential in predicting change in unappealing task characteristics and insufficient task values than deficient ability beliefs and deficient effort beliefs. Thus if students feel the teacher is not supporting their psychological needs over time, they may find the activity less appealing and value the activity less. The characteristics of an activity can be easily changed throughout a school year, subsequently having a changeable effect on students’ values, but how malleable a student’s ability and effort beliefs are over time needs to be researched further. Future longitudinal research, tracking students over three or four school years will help determine whether perceived need support from the teacher can in fact make a difference in increasing a students’ deficient ability and effort beliefs, and perhaps demonstrate the type of need support that may have a stronger predictive utility in bringing about change.

The influence of peers on amotivation

Having identified the importance of the teacher on influencing change in amotivation, Study 3a and 3b also highlighted peers, to be influential for students’ amotivation. As discussed in Chapters V and VI, the results provide support for previous research (Ntoumanis & Vazou, 2005) by demonstrating that the peer motivational climate is related to adaptive and maladaptive behaviours. The findings from the qualitative studies in this thesis demonstrated the impact peers can have in PE lessons on shaping students’ overall experience of PE. In Study 3a, the key dimension of the peer motivational climate was intra-team ability, which has been categorised as an ego-involving feature, displaying a climate of normative ability whereby students are attempting to outperform others. Amotivated students described their dislike of competition due to more able students dominating the game, and subsequently isolating the less able students. Intra-class ability was also found to be one of the students’ anxieties across the transition from primary to secondary school as students reported feeling concerned about the facilities being larger and more spacious,
therefore increasing the chance of being isolated in game situations. Ntoumanis et al (2004) support this finding as they found from qualitative analyses that amotivated students, especially girls, also expressed their dislike for competition, due to emphasising differences in normative ability. Despite these findings, Study 4 found intra-class ability did not significantly predict any of the amotivation dimensions at the start of the study or over the school year. This discrepancy may be due to the type of school where the research was conducted. As Study 4 was carried out in a girls’ boarding school, the students may have had closer relationships with their peers than in Study 3a, possibly due to spending more time with each other after-school hours. Although intra-class ability may still have been present, students’ close relationship with their peers may have influenced their responses on the AI-PE, due to some students perhaps not wanting to highlight their peers as being a reason why they may be ‘turned off’ PE and/or not wanting to admit that they feel less able and possibly feel isolated in lessons as a result of others in the class. Furthermore, the inconsistency between the findings in Study 4 and Study 3a may be due to the subjectivity of qualitative analysis in Study 3a. Until further research is conducted, no firm conclusions can be drawn as to the relationship between intra-class ability and amotivation.

Students’ perception of peer relatedness support was evident in Study 3a, Study 3b and Study 4. In Study 3a perceptions of peer relatedness support was evident when students were discussing their expectations of PE in secondary school. Students reported their anxieties with being left out of friendship groups, the importance of having friends, and how having peers who are supportive can help them become more competent. In Study 3b, students reported the importance of feeling connected to a group, and the value of being encouraged by others in the class in order to help motivate them to persist on tasks and increase their enjoyment. Research has also supported the importance of relatedness need satisfaction in PE (Deci & Ryan, 2000; Vallerand, 2001). Moreover, Study 4 corresponds with the latter findings by providing quantitative evidence for the significant relationship between peer relatedness support and amotivation. The findings showed students’ perceptions of peer relatedness support negatively predicted insufficient task values and unappealing task characteristics. In other words, the more students felt connected to their peers, the more they valued the activity and found the activity more interesting. However, the results showed that an increase in peer relatedness support did not significantly predict
a decrease in any of the amotivation dimensions over a school year. This may be due
to the students participating in different activities every six weeks. Some activities
such as gymnastics and swimming are predominantly individual sports, and therefore
feeling connected within a group or team, and feeling accepted, may be less significant
as it would be in team based sports such as netball. If researchers explored change in
peer relatedness support in one activity over a school year, results may be different.
However, to do this would be impractical and would not be a realistic representation
of students’ PE experiences.

Students’ perceptions of peer improvement, defined as students feeling their
peers are encouraging them in lessons, providing feedback and helping them to
improve on tasks, was found to be a significant predictor of amotivation in Study 4,
but was not addressed specifically in the qualitative studies 3a and 3b. In Study 4,
findings suggested that if students’ perceived their peers to be helping them to
improve, they would believe they had the required effort to achieve the task, they
would value the task more and find the task more appealing. Peers therefore may play
a huge role in creating positive PE experiences in lessons and reducing amotivation. It
is therefore important teachers understand the complexity of different friendship
groups in the PE class, and take time to plan student groupings within the class. More
research needs to be conducted into the relationship between perceptions of peer
improvement and the amotivation dimensions, but at present, the results imply that
encouragement from peers in lessons over a school year may help reduce students’
amotivation.

The findings regarding intra-class conflict in Study 3b were supported by the
findings in Study 4. Intra-class conflict involves the display of unkind behaviours from
peers, such as criticising skills, laughing at others’ weaknesses, belittling others and
complaining about losing (Vazou et al, 2005). In Study 3b, students discussed their
experiences of PE in secondary school at the end of their first year, and negative
behaviour from classmates was deemed an important theme in helping our
understanding of amotivation. Likewise in Study 4, intra-class conflict was found to
significantly predict deficiency in ability beliefs at the start of the study and over time,
suggesting that an increase in negative behaviours from peers may lead students to
become more deficient in their beliefs about their ability. Vazou et al (2005), after
conducting interviews with PE students, found that some students seemed to have
experienced motivational difficulties as a result of intra-class conflict. Collectively the
findings suggest that unsupportive behaviours from peers can exacerbate feelings of low perceived competence in one’s ability. Thus, the influence peers may have on a students’ perception of their ability in a PE class is worrying. Teachers need to be aware of any negative behaviour in and outside of the class and promote a ‘healthy’ ego-involving motivational climate that focuses on peer relatedness support. The literature to date has not explored the consequences of intra-team conflict and the relationship with amotivation, but based on the current findings, more research is needed in this area.

**The relationship between amotivation and physical self-concept**

Physical self-concept has been examined in each study within this thesis, with the results providing fairly consistent evidence across the studies. PSC was deemed as an important variable to explore due to research finding a positive relationship between the physical self and the amount of physical activity endured in adolescence (Ekeland et al; 2004; Marsh et al; 2006). Research has also highlighted individuals who perceive themselves to be unattractive, and are highly anxious about their physical appearance are less motivated to engage in physical activity (Crocker et al; 2008). It was therefore deemed important to investigate PSC throughout this thesis as a potential variable that may affect students’ amotivation, either as a predictor or and outcome variable.

In Study 1 we identified the four amotivation dimensions negatively correlated with PSC, suggesting an increase in amotivation is associated with a decrease in PSC. However no cause and effect relationship can be established based on correlational data. However, findings also revealed deficiency in ability beliefs to be the only amotivation dimension to predict PSC. This highlights that if students do not believe in their ability to achieve in PE, they are likely to have a negative view of themselves physically. The association between deficiency in ability beliefs and PSC is supported by the results detailed in Study 3b. However, Study 3b suggests that low PSC may be a cause of amotivation as opposed to amotivation causing low PSC. The bidirectional relationship between these two variables needs to be explored further to ascertain whether low PSC has a stronger influence on deficiency in ability beliefs. Study 3b also identified that students often compared their ability to others in the class, which based on existing research may also influence PSC (Chanal & Sarrazin, 2007). The importance of the class serving as a frame of reference in which physical self-concept can develop, and subsequently have an effect on deficiency in ability beliefs needs to
be further examined to enhance our understanding of the inter-relationships between these variables.

Based on the findings in Study 1, Study 4 controlled for PSC in order to explore the predictive utility of students’ perceptions of teacher need support and the peer motivational climate on the amotivation dimensions over time. However analyses in Study 2 found the results did not differ when PSC was not controlled for, and therefore PSC was removed in Study 2 from any further analyses. A reason for the non-influential effect of PSC on amotivation over time may be due to the length of the study being too short to observe any significant change in PSC. Moreover, in a study by Soenstroem, Harlow and Salisbury (1993), results also showed that physical self-variables such as self-esteem, perceptions of physical competence and perceptions of skills, did not change much over a one year period, suggesting perhaps that physical self-perceptions may be relatively stable over time. However, this study examined elite competitive youth athletes who may have more stable perceptions regarding the physical self compared to amotivated students.

In summary, exploring changes in PSC over time as well as exploring the nature of the relationship between PSC and the amotivation dimensions requires more research to develop our understanding. This thesis has provided evidence for deficiency in ability beliefs to be particularly influential in determining low levels of PSC, although causality cannot be claimed at this stage, and the findings are based on cross-sectional and qualitative research. The longitudinal research conducted in Study 2 and 4 identifies correlations between PSC and amotivation, but does not identify PSC as being an important moderator in predicting relationships between amotivation and perceptions of need support and perceptions of the peer motivational climate. Future longitudinal and experimental research will help determine the significance of changes in PSC predicting change in amotivation and vice-versa.

Consequences of amotivation

Previous research in physical education has examined the role of motivation in predicting a range of outcome variables. The research completed within this thesis has specifically aimed to examine whether the amotivation dimensions predict teacher ratings of student effort (Studies 2, 3a, 3b and 4) and attainment (Studies 1 and 4). Student effort can be seen as a behavioural marker that can enable teachers to infer students’ motivational states. Assessing students’ persistence on tasks and effort exertion in activities can help determine the quality of students’ engagement in an
activity (Skinner et al, 2009). Moreover, deficient effort beliefs is one of the four components of amotivation, therefore an individual who does not believe they can give the effort to complete an activity presumably would display low engagement in the activity. In Study 1, students’ self-reported emotional and behavioural engagement and disaffection were measured to investigate the concurrent validity of the AI-PE. Behavioural engagement focused on students’ effort and persistence during activities in PE, and behavioural disaffection focused on students’ lack of effort and withdrawal from activities in PE. Correlations demonstrated that the four amotivation dimensions were associated positively with behavioural disaffection and negatively with behavioural engagement, suggesting a significant relationship between an increase in amotivation and a decrease in student effort worth exploring throughout the thesis. In Studies 2 and 4, student effort was measured by the teacher, using a teacher rating of effort scale (Standage, 2006). Teachers were required to observe student effort throughout each lesson, and grade each student at the end of a five to six week unit of work. In Study 2, teachers’ perceptions of student effort was not reported, as we found the amotivation dimensions did not significantly predict student effort at initial status or over time. Similar results were found in Study 4 between the amotivation dimensions, teacher perceptions of effort and effort grade. On the contrary, research by Shen and colleagues (2010b) found amotivation to impede in-class effort. A possible reason for the incongruity may be the different instrumentation that was used to measure student in-class effort. In Studies 2 and 4, the teacher ratings of student effort were measured using a five-point rating scale of motivated behaviour. Shen and colleagues, however, asked the teachers to rate on a scale of 1 to 7 (1 = no effort: 7 = high effort) how much effort the student demonstrated in the lesson. In all of the studies, teachers’ observations were deemed to be more reliable than students’ self-perceptions of effort, however, this may not have been the case. It may, for instance, be advisable for students to rate their in-class effort alongside the teacher using the same scale. This may avoid relying solely on teachers’ perceptions and subjectivity, or the teachers’ past knowledge of students’ effort in class. It may also be difficult for one teacher to comment on thirty students’ effort behaviour from one lesson or at the end of a unit of work, therefore the teachers’ ratings may not be an accurate representation of effort. Alternatively, it may be more reliable to categorise students’ effort in more detail so teachers are clear as to what ‘effort’ in a PE lesson looks like. For example, the teacher rating scale that was used in the thesis (Standage et al, 2006)
asked teachers to circle whether the student ‘preferred easy or more challenging tasks’. If the teacher agreed that the student preferred easy tasks, then does this identify that the particular student is lacking effort in the lesson? A student may have low ability, and prefer tasks that they know they can succeed in, yet still put effort into the task. Moreover, it is the teachers’ perception as to whether the task was easy or challenging. Furthermore, PE is a controlled environment to the extent that students will face repercussions if they do not follow teachers’ instructions. It may be hard therefore to associate student amotivation with lack of effort, as students may not feel they have a choice whether or not to participate.

In contrast, the results from Study 3a and 3b report students’ self perceptions of effort as opposed to teacher perceptions. Through discussions of students’ experience of PE in primary school, results showed deficient effort beliefs to be a common theme. In phase one of Study 3b, students were honest in their responses regarding how hard they try in PE, and associated more challenging tasks as being a reason for ‘giving up easily’. Moreover, students disliked the physiological feelings of exerting too much effort, and perhaps were unaware of the short-term effects of exercise on the body. Study 3a supports these findings, and in addition found students’ amount of effort was determined by the type and length of the activity. For example, students wanted to avoid cross-country because it was an endurance task, whereby they did not feel they were able to sustain the effort required of them to complete the course, however, sprinting 60 meters was perceived as being far more manageable. These qualitative findings suggest that more research is needed to explore the predictive relationship between amotivation and student effort in PE.

Attainment was the second outcome variable examined in this thesis to understand the relationship between the amotivation dimensions and students’ educational achievements in PE. In Study 1, counter to expectations, findings showed deficiency in ability beliefs to positively predict attainment scores. The results suggest that students, who do not believe in their ability, are being awarded a high attainment grade from the PE teacher. Study 4, however, contradicts these findings, showing no significant relationship between deficient ability beliefs and attainment at the start of the study, but over the school year, a student who believed less in their ability received a lower attainment grade. Nevertheless, it is difficult to compare the findings of these studies as Study 1 was a cross-sectional design that explored deficient ability beliefs as a predictor of attainment at one time point. Study 1 obtained an overall attainment
grade of each student at the end of the school year, which encompassed students’ performance in all of the activities, as opposed to Study 4, which employed a longitudinal design assessing students after every activity.

Incongruity in assessment methods between schools and teachers may help explain the inconsistency in findings between Study 1 and 4. For example, highly motivated students may not be challenged in lessons, and therefore display low motivation and low effort due to boredom. As a result, some teachers may award those students with a low attainment grade. Similarly, some teachers may know the students’ abilities and capabilities in the specific activity outside of lessons and award a student displaying low motivation and low effort in a PE lesson with a high attainment grade. Therefore assessment in PE is often highly subjective, and as a result may not correspond with students’ self-reported amotivation scores. Regardless of these differing results, deficient ability beliefs seem to play a significant role in students’ progress in PE.

**Contribution to knowledge**

Physical education is one of many environments whereby students have the opportunity to engage in physical activity and subsequently improve their health and well-being. The UK government is continually aiming to slow down the rise of childhood obesity due to health professionals forecasting by 2050, 50% of children in the UK will be obese. While current policies are in place, as well as the national curriculum to try and engage young people in physical activity, obesity levels continue to increase, and there remains a large proportion of young people who are leading more sedentary lifestyles and disengaging from exercise, resulting in amotivation (Amiot et al, 2004; Gaudreau & Antl, 2008).

This thesis aimed to understand the multidimensionality of amotivation in physical education, and explore possible determinants of the amotivation dimensions, as well as investigating amotivation as a predictor of important educational outcomes. Through the completion of the studies, several implications have been discussed to demonstrate how the research contributes to knowledge. Using quantitative analyses, this thesis investigated adolescents’ amotivation in PE, and explored potential relationships with perceptions of teacher need support, peer motivational climate, PSC, student effort and attainment. By also conducting qualitative methods, this thesis examined amotivated adolescents’ experiences and expectations in PE from the students’ perspective, and then linked the reported evidence to existing theory. The
series of studies, by using different methods, provide new knowledge, as well as a broader insight concerning amotivation in the PE setting.

There is still a dearth of literature that has explored amotivation in PE as a multidimensional construct; therefore the studies in this thesis provide valuable support for pre-existing research. Study 1, in particular, conceptually validated the AI-PE as a reliable measure of amotivation amongst adolescence, and supported the four-factor structure of the measure proposed by Shen and colleagues (2010a). The research within this thesis has also indicated the possibility of the four amotivation dimensions being divided into internal and external factors. For example deficient ability and effort beliefs categorised as internal factors and insufficient task values and unappealing task characteristics as external factors. The findings in Study 4 have indicated the possibility internal dimensions may predict change in external dimensions over time, but more research is needed to make any conclusions.

Furthermore, this thesis has explored amotivation through self-determination theory (Deci & Ryan, 2000), and in particular has focused on socio-contextual factors such as teachers’ need support, that SDT literature has highlighted to be crucial in supporting individuals’ psychological state of mind. In the last decade, research has been conducted, exploring adaptive factors of the social environment, such as teachers’ interpersonal style, structure in lessons and interpersonal involvement (Reeve et al; 2004). However, apart from Shen et al (2010b), and the studies within this thesis, no research to date has explored relationships between teachers’ need support and amotivation in PE. This thesis therefore contributes to our understanding of the relationships between the amotivation model (Shen et.al; 2010a) and the importance of students’ basic needs being fulfilled, in order to increase their self-determination on the continuum from amotivation (absence of motivation) to intrinsic motivation (high self-determination).

The findings from the qualitative analysis in this thesis have also shed light on additional theories that may contribute to our understanding of the specific amotivation dimensions. For example, achievement goal theory (Nicholls, 1984), motivational climate (Ames, 1992), and self-theories (Dweck, 1986) have been discussed to help explain reasons for deficient ability beliefs, and associations between amotivated behaviours and the peer motivational climate dimensions. This thesis highlights the need for researchers to consider the importance of all these theories when attempting to understand the concept of amotivation in a PE setting in the future.
Furthermore, the qualitative studies invite researchers to question whether the four dimensions of amotivation are the sole indicators of amotivation, or whether ego-oriented individuals and/or students who uphold entity beliefs about their ability may also contribute to amotivated behaviours.

This thesis has also provided the first piece of longitudinal evidence that has explored amotivation as a multidimensional construct in PE. Study 2 looked at changes in the amotivation dimensions over a six-week unit of work and Study 4 conducted similar analyses over several units of work across a school year. In addition Study 3b tracked students across the transition from primary to secondary school in order to further understand potential changes in amotivation. By being able to investigate potential variables that may influence change in amotivation, and how changes in amotivation may influence educational outcomes, such as student effort and attainment, this thesis has opened up new avenues worth exploring in future research.

Practical implications for teachers

Having a theoretical understanding of amotivation in order to understand why some students are not wanting to engage in PE is extremely important, but additionally researchers need to provide practical solutions derived from evidence, for teachers, health practitioneres and other individuals working in a school environment. There are several implications that can be proposed from the findings of this thesis.

The present studies have shown the importance of teachers to try and identify students who are deficient in their ability beliefs, due to the potential outcomes of such deficiencies. First, teachers need to be aware that any deficiencies in ability and/or self-determination may lead to low feelings towards the physical self (Deci & Ryan, 2000), lowering of physical self-concept, and causing some students to avoid certain activities. Teachers need to also be aware that students’ deficiency in ability beliefs may change depending on the activity. Students have identified feeling more deficient in their ability, and evaluate their physical self more negatively in activities such as gymnastics, whereby their physical shape and physical ability is on display. In the qualitative studies, students reported the PE kit to be a factor in gymnastics due to the attire being too tight, and therefore teachers need to recognise and empathise with the less able students, and provide all students with PE kit that they feel comfortable wearing for the activity in question.
A second implication relates to education of teachers to help them understand the importance of grouping students correctly within the PE class, due to a students’ perceptions of their ability possibly being influenced by the ability of others. In particular, for those students who are less able, there are numerous negative effects of being grouped or placed in a class with more able classmates. The qualitative studies enrich our understanding of their experiences of PE in primary and secondary school, and highlight that students as young as ten years old self-evaluate their ability compared to their peers, using the PE class as a frame of reference. Individuals who perceive themselves to be low ability compared to their peers may have low PSC, and previous research has also demonstrated students will experience boredom and become disengaged within the lesson (Barnes & Spray, 2013). A possible solution for teachers may be to group PE classes according to student ability, subsequently creating a lower ability class and a higher ability class. Although there will still be differences in ability level within the class, the differences will not be so diverse, and lower ability students in particular will not feel so isolated in competitive situations due to having more chance to play an active role in a game. It is also imperative teachers are aware that students who are deficient in their ability beliefs are perhaps more vulnerable to peer comparison processes (Festinger, 1954) and their engagement may decrease as a result.

A third implication relates to the role of the teacher. Throughout this thesis we have drawn upon self-determination theory to examine how important social agents, (e.g. PE teachers and peers) can influence students’ amotivation, and have an effect on educational outcomes. The role of the teacher is extremely important in influencing students’ motivation to engage in PE, and the studies in this thesis demonstrate that inadequate support of students’ basic psychological needs over time predicts an increase in some of the amotivation dimensions, potentially leading to an increase in overall amotivation. The studies therefore support the central tenet of basic psychological needs theory (BPNT; Ryan & Deci, 2000) in that individuals’ needs should be supported to promote psychological well being and optimal functioning (Deci & Ryan, 2000). Therefore, the PE context must be supportive of the basic needs to facilitate the process of internalisation. The findings in this thesis highlight, that teachers who fail to provide adequate support of the three needs may have detrimental effects on students’ amotivation. For example, the findings suggest inadequate perceptions of all three needs of support will result in PE tasks becoming more
unappealing throughout a unit of work, and an increase in inadequate autonomy support over a school year may result in students valuing the activity less and believing themselves to be less able. Furthermore, inadequate competence support also resulted in students devaluing the activity. Therefore, teachers need to be educated on how to facilitate autonomy, competence and relatedness in lessons in order to forestall amotivation.

A fourth implication therefore is to educate teachers on how to facilitate autonomy in lessons. PE teachers may provide students with a list of options whereby they can choose the activities they would like to participate in throughout the school year. Thus teachers are nurturing students’ volition. Moreover, teachers can provide students with the required information to execute a skill, but then allow students to choose the best way in which to practise the skill, by encouraging students to devise their own skill practice within their group. Past research into ways of increasing autonomy supportive environments have shown teachers need to promote structure in the lesson, which promotes students’ choice within the limits of the class (Reeve & Jang, 2006). Structured lessons are organised, have clear expectations and provide informational feedback to students (Reeve & Jang, 2006). Providing feedback, together with helping students focus on developing skills as opposed to promoting competitive situations where the outcome is more important, collectively facilitate students’ perceptions of competence (Alderman et al, 2008; Ames, 1992). Moreover, it is important teachers provide a meaningful rationale expressing why it is important to participate in an activity, follow certain rules, practice a skill etc.. By doing so, students may value the activity more due to understanding the importance of partaking in the activity. An explanation of why teachers require students to participate in certain activities such as cross-country and gymnastics, may help students to understand the logical reasoning behind the request, and as a result promote the internalisation of such values (Perlman & Webster, 2013). A meaningful rationale may also help promote interest in an activity through an understanding of the health benefits certain activities can offer, and using non-controlling language may encourage choice in order to increase students’ self-determination (Reeve, 2006; 2009). In addition, teachers are advised to acknowledge students’ feelings and perspectives about an activity and support co-operation within groups in order to support students’ relatedness. Past interventions to train teachers on how to be more autonomy supportive in the classroom have so far been successful in increasing psychological need satisfaction,
engagement and amotivation (Cheon & Reeve, 2014; Reeve & Jang, 2006) but this thesis identifies a need for future interventions to be tested specifically in the PE context.

A fifth practical implication is the need for teachers to be educated about the importance of creating a predominantly task-involving motivational climate that promotes self-improvement of skills and encourages effort, rather than an ego-oriented motivational climate that promotes competition and social comparisons. Although the effects of the perceived motivational climate and goal-oriented behaviours have not been examined in this thesis, the qualitative studies highlight ego-oriented climates as having negative consequences for students who are more amotivated. For example, students discussed feeling more isolated during competitive games and therefore felt less competent. They also reported that teachers gave more attention to the higher ability students, and received minimal support and encouragement when learning tasks. Teachers therefore have to make sure they identify weaker students as being a key group to target, and to deem weaker students as potentially more vulnerable to becoming disengaged and ‘dropping out’ of PE in the future.

A sixth implication relates to educating teachers about the influence peers may have in increasing or decreasing student amotivation. Teachers need to be aware of differing friendship groups within the class, and use their knowledge to select groups carefully. The effect peers can have on hindering student amotivation is important, and teachers need to encourage group work whereby peers are helping each other to improve their skills, and also encouraging each other to persist on tasks. Teachers need to also be aware of the detrimental effects intra-class conflict can have on a students’ ability beliefs. Teachers need to observe and listen for any unkind and negative comments made between students, and act immediately. However, more importantly teachers need to create a PE environment whereby students are encouraging each other and supporting all abilities in competitive situations.

Finally, a further implication for teachers concerns ways in which students are assessed in PE. As an inconsistent directional relationship has been found in this thesis between students’ lack of ability beliefs and attainment grade, it poses the question: how reliable are assessment methods in PE in measuring student performance? At the time of conducting the studies in this thesis, the PE curriculum required teachers to assess students based on specific level descriptors, explained in Chapter II. Generic guidelines were given to teachers on the standard students have to perform to in order
to achieve a certain level. However, these guidelines were generic and did not apply specifically to individual activities. Teachers therefore created their own level descriptors for different activities, which was not necessarily standardised across all schools in the UK. Furthermore, teachers need to be aware that assessment in PE is highly subjective unless there is a set of clear standardised criteria for each activity that all teachers within a PE department use to make their assessments. Moreover, McChonachie-Smith (1991) identified tension amongst PE teachers when assessing students’ capability in PE. Capability can be both the product (performing a good pass) and the process (reflecting and evaluating performance). It appeared that product was less complex to focus on when awarding a level than process. Therefore it is worth noting that some PE teachers’ primary focus of attention may be on products, and others on process when conducting formal assessment (McChonachie-Smith, 1991), again highlighting the need for standardised assessment methods. More importantly, teachers, on occasions, should aim to assess students collectively and cross-reference attainment grades to increase the reliability of assessment methods. It is imperative that PE teachers view assessment in PE as essential in gaining more of an understanding about students’ performance and effort behaviours throughout an activity. Furthermore, it is advised that teachers provide feedback to students on their attainment and effort grades, and establish reasons for underperformance. By listening to the students and providing empathy and understanding to their needs, more support can be provided to help increase self-determination.

Although there are several practical implications for teachers that have been addressed so far, these are only recommendations. More research is required surrounding perceptions of need support on amotivation, the motivational climate, types of activity, assessment, and interventions to decrease amotivation. By conducting more research into these areas, more information and evidence will be provided to allow for the development of further practical implications for teachers in the school environment. This thesis has highlighted the multidimensionality of amotivation as a fairly new concept, and is therefore in the early stages of examination within PE. Future research is needed therefore before any major interventions are put in place.

**Limitations of research and recommendations for future research**

There are a number of potential limitations of the research within this thesis that need to be acknowledged to guide future research. Although the limitations have
already been discussed at the end of each chapter, the following section serves to draw together the limitations, and collectively provide an overview. In addition, recommendations for future research are discussed to advance our knowledge of amotivation in physical education.

One of the characteristics of the students sampled in this thesis is the small number reported to be highly amotivated. In Study 1, a large sample size was used, and we were therefore able to identify a relatively large sub-sample of students (n = 164) who obtained a mean score at or above the mid-point on the question ‘How often do you experience a lack of motivation to do PE lessons?’ However in Study 2 and 4, the number of students who scored above the midpoint on the above question was too low to conduct separate analyses and therefore the whole sample was included. The problem however, is the above question may be too vague and may not reflect the students’ responses on the AI-PE. For example, some students’ responses on the AI-PE did not correspond with their response to the above question. Students may have reported experiencing a lack of motivation ‘very often’, but still continued to demonstrate low scores on all the four amotivation dimensions. It was therefore important to include the whole sample in Studies 2 and 4 in line with previous research. The reality is, within a PE class, there may only be a handful of amotivated students, but the research within this thesis has aimed to establish contextual variables that may increase or decrease amotivation scores over time, enabling teachers to intervene early before a student disengages or ‘drops out’ of the activity altogether.

Another limitation from this thesis is that students felt need satisfaction was not measured as a potential mediator between the environment and the amotivation sub-types. Self-determination theory suggests that the relationship between perceived need support and autonomous regulation of exercise behaviour is mediated by the satisfaction of the three basic psychological needs (Deci & Ryan, 1985). Therefore, if a student perceives their psychological needs are supported, their autonomy, competence and relatedness need satisfaction will increase, and subsequently increase their autonomous motivation. Studies in this thesis omitted the role that need satisfaction plays in predicting amotivation, partly due to the time constraints when administering the questionnaires. Measuring students’ need satisfaction was not deemed as essential to help us understand the relationship between perceived need support and amotivation. One can assume based on theory, that if a student perceives their teacher to inadequately support their needs, then their needs will not be satisfied.
Another potential limitation concerns the instruments used to measure the outcome variables; student effort and attainment. Although teachers’ reports have been deemed to be a more reliable measure than students’ self assessment (Shen et al., 2010b), gaining students’ self-report of their effort and attainment levels, in addition to teachers’ reports, may provide more of an insight into their levels of engagement in PE. In addition, obtaining another PE teacher’s ratings of individuals’ effort and performance alongside the class PE teacher will improve the reliability of these measures.

Although the qualitative studies in this thesis provide invaluable information towards enhancing our understanding of amotivation across the transition from primary to secondary, the findings are based on a small sample of students, identified as being highly amotivated. It is therefore difficult to generalise the findings and draw concrete conclusions. Nevertheless, the results provide insight into students’ experiences and expectations in PE, and support the findings derived from the quantitative studies.

In addition to the future recommendations for research mentioned at the end of each study, there are several other suggestions for future research, which can be explored to increase our understanding of amotivation in physical education. One possible avenue would be an examination of gender differences and amotivation. Research discussed in Chapter I has drawn attention to lower participation levels among adolescent girls (Slater & Tiggleman, 2010). This research would look to explore reasons why girls may be more ‘turned off’ PE than boys, and whether girls score more highly than boys on specific amotivation dimensions.

Another route could be to explore changes in amotivation as a student progresses through the school years. Although longitudinal research was conducted throughout this thesis, exploring changes in amotivation over a longer period of time would be more insightful. For example, research could track the same students from their last year of primary school through to their last year of secondary school, and assess their amotivation levels at regular intervals each year. Thus, researchers would be able to investigate changes in amotivation as a student develops and identify key stages in students’ development that may increase amotivated behaviours. For example, Study 1 identified physical self-concept as being associated with deficient ability beliefs. Changes in a child’s physical development therefore may be a key marker in triggering changes in students’ motivation in PE.
Taking all the evidence together, the findings of this thesis show that perceived peer motivational climate plays an important role in affecting students’ amotivation. It is recommended that future research should examine peer motivational climate alongside perceptions of teacher need support, to ascertain the impact of peers on motivation.

This thesis has explored students’ perceptions of need support and the four amotivation dimensions, however Deci and Ryan (2000) have suggested psychological need thwarting to perhaps be a stronger indicator of maladaptive behaviours among students. Research has also suggested that when adolescents basic psychological needs are actively thwarted, they demonstrate a more controlled type of motivation where they feel pressured to engage in activities (Bartholomew et al; 2011; Soenens, Sierens, Vansteenkiste, Dochy, & Goossens, 2012.) However, Bartholomew and colleagues explored need thwarting behaviours of coaches and therefore it is difficult to translate their findings to the school context. In the school environment, controlled motivation may be more prevalent due to students engaging in activities to avoid punishment and may or may not be due to need thwarting behaviours from the teacher. Additionally it would be very unlikely that PE teachers would actively undermine students’ needs for autonomy, competence and relatedness, due primarily to extensive teacher training to deliver a structured teaching environment whilst encouraging personal volition. Besides, there may be a difference between athletes’ perceptions of coach controlling behaviours compared to students’ perception of teacher controlling behaviours due to the different coach-athlete and teacher-student relationship that may be present. Nevertheless, future research should investigate students’ perceptions of need thwarting by the teacher and the subsequent effect need thwarting may have on the four amotivation dimensions.

**Final Conclusions**

This thesis provides new knowledge concerning amotivation among adolescents in physical education. The research provides support for the measure of the AI-PE and the multidimensionality of amotivation, as well as providing an insightful understanding of the relationships between the amotivation dimensions, students perceptions of teacher need support, peer motivational climate, physical self-concept, and important educational outcomes such as student effort and attainment. This research has also demonstrated the potential of integrating different motivational theories such as self-determination theory and achievement goal theory, in order to
advance our understanding of amotivation in the PE context. In addition, the thesis has shown the value of conducting longitudinal research in order to gain more insight into students’ experiences in PE, and motivational changes that may take place over time. Collectively, the findings demonstrate that social agents such as teachers and peers play a role in influencing changes in students’ amotivation dimensions, and having high amotivation can produce negative outcomes such as low physical self-concept and attainment grades. This thesis also provides researchers with a platform in which to direct future research, and can subsequently help physical educators design future PE programmes that enhance students’ motivation in PE, and forestall amotivated behaviours. Finally, it is hoped that the amotivation sub-types will continue to be explored in order to acquire more of an understanding of the antecedents and consequences of amotivation in adolescence, and to be able to design effective interventions to help those students who are being ‘turned off’ PE and participate in less physical activity.
References
Aaron, D. J; Storti, K. L; Robertson, R. J; Kriska, A. M; LaPorte, R. E. (2002). Longitudinal study of the number and choice of leisure time physical activities from mid to late adolescence. *Archives of Pediatric and Adolescent Medicine, 156*(11), 1075-1080.


Department of Health (2011c). *Obesity and Healthy Eating*. UK


Digelidis, N., & Papaioannou, A. (1999). *Age-group differences in intrinsic motivation, goal orientations and perceptions of athletic competence, physical
appearance and motivational climate in Greek physical education. 

*Scandinavian Journal of Medicine & Science in Sports, 9*(6), 375-380.


Drake, A. J; Smith, A; Betts, P. R; Crowne, E. C; & Shield, J. P. H. (2002). Type 2 diabetes in obese white children. *Archives of Disease in Childhood, 86*, 207-208.


Hein, V; & Koka, A. (2007). Perceived feedback and motivation in physical education
and physical activity. In M. S. Hagger & N. L. D. Chatzisarantis (Eds.), *Intrinsic motivation and self-determination in exercise and sport* (pp. 127-140). Champaign, IL: Human Kinetics.


Moore, E. (2013). Should traditional sports such as football and basketball be excluded from high school physical education to make room for more lifelong physical activities? *Journal of Physical Education and Dance, 84*(2), 59-62.


Perlman, D. J. (2014). Motivating the student: Sport education can be a framework for success. *Journal of Physical Education, Recreation and Dance, 85*(6), 12-16.


Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist, 44*(3), 159-175.


Appendices
Appendix A

Ethical Clearance Checklist
(TO BE COMPLETED FOR ALL INVESTIGATIONS INVOLVING HUMAN PARTICIPANTS)

If your research is being conducted off-campus and ethical approval has been granted by an external ethics committee, you may not need to seek full approval from the University Ethical Advisory Committee. However you will be expected to provide evidence of approval and the terms on which this approval has been granted.
If you believe this statement applies to your research, please contact the Secretary of the Ethical Advisory Committee for confirmation.

If your research is transferring into Loughborough University and approval was obtained from your originating institution, there is a requirement on the University to ensure that appropriate approvals are in place.
If you believe this statement applies to your research, please contact the Secretary of the Ethical Advisory Committee with evidence of former approval and the terms on which this approval has been granted.

It is the responsibility of the individual investigators to ensure that there is appropriate insurance cover for their investigation.
If you are at all unsure about whether or not your study is covered, please contact the Finance Office to check.

Section A: Investigators

Name, Status and Email Address of Senior Investigators (University Staff Research Grade II and above):
(Please underline responsible investigator where appropriate)

Department:

Name, Status and Email Address of Other Investigators:

Department:

Title of Investigation
A1. Do investigators have previous experience of, and/or adequate training in, the methods employed?

Yes ☒ No ☐ †If No, Please provide details below

A2. Will junior researchers/students be under the direct supervision of an experienced member of staff?

Yes ☒ No ☐ †If No, Please provide details below

A3. Will junior researchers/students be expected to undertake physically invasive procedures (not covered by a generic protocol) during the course of the research?

Yes† ☐ No ☒ †If Yes, Please provide details below

A4. Are researchers in a position of direct authority with regard to participants (eg academic staff using student participants, sports coaches using his/her athletes in training)?

Yes† ☒ No ☐ †If Yes, Please provide details below

If you have selected one of the answers above marked with an † please provide additional information on how you intend to manage the issues (please continue onto a separate sheet if required), then submit this checklist to the Secretary to the EAC:

Section B: Participants

Vulnerable Groups
Will participants be knowingly recruited from one or more of the following vulnerable groups?

B1. Children under 18 years of age

(please refer to published guidelines)

Yes# ☒ No ☐

B2. People over 65 years of age

☑

B3. Pregnant women

Yes# ☐ No ☒

B4. People with mental illness

☑

B5. Prisoners/Detained persons

☑

B6. Other vulnerable group (please specify )

Yes# ☐ No
# If the procedure is covered by an existing generic protocol which refers specifically to the vulnerable group(s), please insert reference number here

If the procedure is not covered by an existing generic protocol, please submit a full application to the Ethical Advisory Committee

Chaperoning Participants
If appropriate, e.g. studies which involve vulnerable participants, taking physical measures or intrusion of participants' privacy:

B7. Will participants be chaperoned by more than one investigator at all times?
   - Yes ☐ ☑ No* ☒ ☑ N/A† ☒
   †If N/A, please provide details below

B8. Will at least one investigator of the same sex as the participant(s) be present throughout the investigation?
   - Yes ☐ ☑ No* ☒ ☑ N/A† ☒
   †If N/A, please provide details below

B9. Will participants be visited at home?
   - Yes* ☐ ☑ No ☒ ☑ N/A† ☒
   †If N/A, please provide details below

* Please submit a full application to the Ethical Advisory Committee.

If you have selected one of the answers above marked with an † please provide additional information on how you intend to manage the issues (please continue onto a separate sheet if required), then submit this checklist to the Secretary to the EAC:

Section C: Methodology/Procedures

To the best of your knowledge, please indicate whether the proposed study:

C1. Involves taking bodily samples
   - Yes# ☐ ☑ No ☒
   (please refer to published guidelines)

C2. Involves procedures which are likely to cause physical, psychological, social or emotional distress to participants
   - Yes# ☐ ☑ No ☒

C3. Is designed to be challenging physically or psychologically in any way (includes any study involving physical exercise)
   - Yes# ☐ ☑ No ☒

# If the procedure is covered by an existing generic protocol, please insert reference number here
If the procedure is not covered by an existing generic protocol, please submit a full application to the Ethical Advisory Committee
C4. Exposes participants to risks or distress greater than those encountered in their normal lifestyle

[ ] Yes* [ ] No

C5. Involves collection of body secretions by invasive methods

[ ] Yes* [ ] No

C6. Prescribes intake of compounds additional to daily diet or other dietary manipulation/supplementation

[ ] Yes* [ ] No

C7. Involves testing new equipment

[ ] Yes* [ ] No

C8. Involves pharmaceutical drugs

[ ] Yes* [ ] No

(please refer to published guidelines)

C9. Involves use of radiation

[ ] Yes* [ ] No

(please refer to published guidelines). Investigators should contact the University's Radiological Protection Officer before commencing any research which exposes participants to ionising radiation – e.g. x-rays).

C10. Involves use of hazardous materials

[ ] Yes* [ ] No

(please refer to published guidelines)

C11. Assists/alters the process of conception in any way

[ ] Yes* [ ] No

C12. Involves methods of contraception

[ ] Yes* [ ] No

C13. Involves genetic engineering

[ ] Yes* [ ] No

* If you have answered ‘Yes’ to any of the above please submit a full application to the Ethical Advisory Committee

Section D: Observation/Recording

D1. Does the study involve observation and/or recording of participants?

[ ] Yes [ ] No* If No, please go to Section E

If Yes,

D2. Will those being observed and/or recorded be informed that the observation and/or recording will take place?

[ ] Yes [ ] No*

* Please submit a full application to the Ethical Advisory Committee

Section E: Consent and Deception
E1. Will participants give informed consent freely?

Yes ☒ If yes please complete the Informed Consent section below.
No* ☐ *If no, please submit a full application to the Ethical Advisory Committee.

Note: where it is impractical to gain individual consent from every participant, it is acceptable to allow individual participants to "opt out" rather than "opt in".

Informed Consent

E2. Will participants be fully informed of the objectives of the investigation and all details disclosed (preferably at the start of the study but where this would interfere with the study, at the end)?

Yes ☒ No* ☐

E3. Will participants be fully informed of the use of the data collected (including, where applicable, any intellectual property arising from the research)?

Yes ☒ No* ☐

E4. For children under the age of 18 or participants who have impairment of understanding or communication:
- will consent be obtained (either in writing or by some other means)?
  Yes ☒ No* ☐ N/A ☐
- will consent be obtained from parents or other suitable person?
  Yes ☒ No* ☐ N/A ☐
- will they be informed that they have the right to withdraw regardless of parental/guardian consent?
  Yes ☒ No* ☐ N/A ☐

E5. For investigations conducted in schools, will approval be gained in advance from the Head-teacher and/or the Director of Education of the appropriate Local Education Authority

Yes ☒ No* ☐ N/A ☐

E6. For detained persons, members of the armed forces, employees, students and other persons judged to be under duress, will care be taken over gaining freely informed consent?

Yes ☒ No* ☐ N/A ☒

* Please submit a full application to the Ethical Advisory Committee

Deception

E7. Does the study involve deception of participants (ie withholding of information or the misleading of participants) which could potentially harm or exploit participants?

Yes ☒ No ☒ If No, please go to Section F

If yes,
E8. Is deception an unavoidable part of the study?

Yes ☒ No* ☐
E9. Will participants be de-briefed and the true object of the research revealed at the earliest stage upon completion of the study?  
Yes □ No* □

E10. Has consideration been given on the way that participants will react to the withholding of information or deliberate deception?  
Yes □ No* □

* Please submit a full application to the Ethical Advisory Committee

Section F: Withdrawal

F1. Will participants be informed of their right to withdraw from the investigation at any time and to require their own data to be destroyed?  
Yes □ No* □

* Please submit a full application to the Ethical Advisory Committee

Section G: Storage of Data and Confidentiality

Please see University guidance on Data Collection and Storage

G1. Will all information on participants be treated as confidential and not identifiable unless agreed otherwise in advance, and subject to the requirements of law?  
Yes □ No* □

G2. Will storage of data comply with the Data Protection Act 1998?  
(Please refer to published guidelines)  
Yes □ No* □

G3. Will any video/audio recording of participants be kept in a secure place and not released for use by third parties?  
Yes □ No* □

G4. Will video/audio recordings be destroyed within six years of the completion of the investigation?  
Yes □ No* □

G5. Will full details regarding the storage and disposal of any human tissue samples be communicated to the participants?  
Yes □ No* □

* Please submit a full application to the Ethical Advisory Committee

Section H: Incentives

H1. Have incentives (other than those contractually agreed, salaries or basic expenses) been offered to the investigator to conduct the investigation?  
Yes* □ No □  †If Yes, Please provide details below
H2. Will incentives (other than basic expenses) be offered to potential participants as an inducement to participate in the investigation?

- Yes†
- No

†If Yes, Please provide details below

If you have selected one of the answers above marked with an † please provide additional information on how you intend to manage the issues (please continue onto a separate sheet if required), then submit this checklist to the Secretary to the EAC:

Appendix B

Headteacher
Mill Hill County High School
North London
Worcester Crescent
Dear Headteacher,

I am a current PhD student at Loughborough University and a Teacher of Physical Education at Mill Hill County High School, North London. I am hoping to undertake a research project in the area of Motivation in Physical Education. Specifically, I am hoping to investigate reasons why some pupils may lack motivation in PE and subsequently are disengaged in lessons.

Therefore, I am writing to ask if you would give permission for the children in your care to be asked if they would consider participating in my study. This would involve them completing a questionnaire that would take between 20 and 30 minutes on one occasion. The questionnaire has been carefully designed to ensure that it is suitable for the age-group targeted and the study is subject to ethical approval by Loughborough University.

Please contact me or my project supervisor, Dr. Christopher Spray, (contact details are provided below) to let me know of your decision and if you have any queries about the research.

Many thanks

Yours sincerely,

Rachel Jackson

R.Jackson@lboro.ac.uk 07919 098162

Contact details for Dr. Christopher Spray:

Telephone: 01509 226339
Email: C.M.Spray@lboro.ac.uk

Appendix C

Dear Parent/Carer

I am a research student at Loughborough University and a Teacher of Physical Education at Mill Hill County High School, North London who is currently
conducting research into understanding children’s motivation in physical education. The Head teacher has agreed to allow me to conduct my research within the physical education department at the school. However, in line with Loughborough University procedures that safeguard good practice, I am also required to ask for your permission for your child to participate in my research. The purpose of the research is to understand more about children’s thoughts and feelings in relation to physical education lessons and will involve the completion of a questionnaire during one of their PE lessons. All information collected is confidential and no individual will be identifiable by name in any publication arising from the research.

Please complete the section below and return this letter to the PE staff at the school via your son/daughter if you do not give permission for your son/daughter to participate in the research. If you require any further information about the research project please contact me at the following email address: R.Jackson@lboro.ac.uk.

Yours faithfully

Ms Rachel Jackson
Research Student
School of Sport and Exercise Sciences
Loughborough University

I do not give permission for ___________________________ Form Group___ to take part in the research being conducted at ........................................ School.

Signed ___________________________
(Parent/Carer)

Appendix D
Research Project to Explore The Predictors Of Amotivation in School Physical Education

Participant Information Sheet

Main investigator: Dr. Christopher Spray, School of Sport, Exercise and Health Sciences, Loughborough University. Tel: 01509 226339, email C.M.Spray@lboro.ac.uk.
Research student: Rachel Jackson, 19 Laybrook, St Albans, Hertfordshire, AL49NJ, email R.Jackson@lboro.ac.uk.

What is the purpose of the study?

The purpose of this study is to examine motivation among students in physical education.

Who is doing this research?

Rachel Jackson (a current PhD student at Loughborough University and full-time teacher of Physical Education) will be conducting the research. Her project supervisor is Dr. Christopher Spray, senior lecturer in the School of Sport, Exercise and Health Sciences.

Once I take part, can I change my mind?

Yes. After you have read this information and asked any questions you may have we will ask you to complete a Willingness to Participate Form. However, if at any time before, during or after the sessions you wish to withdraw from the study, please contact the main investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

How long will it take?

It should take about 20-30 minutes to complete the questionnaire. You only need to do this on one occasion.

Is there anything I need to do before the sessions?

No
Is there anything I need to bring with me?
A pen/pencil

Who should I give the questionnaire back to?
Please return the questionnaire to your teacher.

What will I be asked to do?
Please read the instructions carefully and complete the questionnaire as required.

What personal information will be required from me?
You will be asked to give information concerning your gender and age.

Are there any risks in participating?
There are no risks associated with participating in this research.

Will my taking part in this study be kept confidential?
Once the questionnaires are collected, the Willingness to Participate Form with your signature on will be removed to ensure responses are anonymous. All the raw data will be confidential and only the research student and supervisor will have access to the data. The data will be stored safety in accordance with the Data Protection Act 1998.

What will happen to the results of the study?
The results of the study will be compiled and analysed using a statistical software package and used to draw conclusions as part of the research project.

What do I get for participating?
There is no incentive to participate in this study, although your time and effort are much appreciated.

I have some more questions who should I contact?
Rachel Jackson (PhD research student) or Dr. Christopher Spray can assist you with any enquiries or concerns. Their contact details are at the top of this information sheet.

**What if I am not happy with how the research was conducted?**

Please contact the project supervisor with any concerns. You may also visit Loughborough University's web page concerning academic misconduct for more information. The link is: [http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm](http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm).

---

**Appendix E**

*Willingness to Participate Form*

A study of pupils’ motivation in physical education
I am a teacher in Physical Education who is currently doing research at Loughborough University. I am interested in learning more about pupils’ motivation in PE. To gather this information, I have put together a questionnaire that contains a number of sections. The questionnaire will take 20 to 30 minutes to complete.

You do not have to fill out the questionnaire and no one will mind if you do not want to do the study. All your answers will be confidential and will not be seen by any of your teachers. If you would like to take part in this research, please read the information below and sign your name in the space provided.

1. The purpose of this study has been explained to me.
2. I have read and understood the information above and this form.
3. I have been able to ask questions.
4. I understand that I do not have to take part in this study.
5. I understand that I have the right to drop out from this study at any stage for any reason, and that I will not be required to explain my reasons.
6. I understand that all the information I provide will be treated in strict confidence.
7. I agree to take part in this study.

Your name

Your Signature

Signature of Investigator

Date
Appendix F

PHYSICAL EDUCATION QUESTIONNAIRE

2010
Please complete the following questions.

1. **School**:.................................................................

2. **Year Group**:............................................................

3. **Gender (please tick)**:  
   - Male  
   - Female

4. **What is your date of birth?**
   a. Write the date you were born on the dotted line below (e.g. 1st, 14th, 23rd).
   b. Please tick below the month that you were born.
      
      January  
      February  
      March  
      April  
      May  
      June  
      July  
      August  
      September  
      October  
      November  
      December

5. What year were you born? (e.g. 1995,1997,1999)
Please answer each question below.
There are no right or wrong answers.
Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th>How often do you experience a lack of motivation to do PE lessons?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
</tr>
</tbody>
</table>

Please circle below, one number for each statement that corresponds with your reasons for **NOT** wanting to do PE.

<table>
<thead>
<tr>
<th>I have no good reason to do PE.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not correspond at all</td>
</tr>
<tr>
<td>Correspond exactly</td>
</tr>
</tbody>
</table>

2. PE is not valuable to me.  
1 | 2 | 3 | 4 | 5 | 6 | 7
3. I have no good reason to do PE in school.

4. PE is not important to me.

5. I don’t have what it takes to do well in PE.

6. I don’t have the knowledge required to succeed in PE.

7. I’m not good at PE.

8. The tasks demanded of me are beyond my abilities

9. I find that PE is boring.
10. I don’t like PE.  

11. I have the impression that it is always the same activities every year.  

12. My PE lessons are not stimulating.  

13. I’m a bit lazy.  

14. I’m not energetic enough  

15. I can’t seem to put the effort in that is required in the lesson.  

16. I don’t have the energy to do PE.
**SECTION C**

- Please answer each question below.
- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th></th>
<th>Not at all true</th>
<th>Very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I try hard to do well in PE.</td>
<td>1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>2. PE is not all that fun for me.</td>
<td>1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>3. When I’m in PE, I participate in class discussions.</td>
<td>1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>4. When we work on something in PE, I feel discouraged.</td>
<td>1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>5. When I am in PE, I feel good.</td>
<td>1 2 3 4</td>
<td></td>
</tr>
</tbody>
</table>
6. When we learn something in PE, I feel interested.  

7. When I am in PE, I just act like I am participating.  

8. In PE, I work as hard as I can.  

9. I don’t try very hard in PE.  

10. I enjoy learning new skills in PE.  

11. In PE, I just do enough to get through the lesson.  

12. PE lessons are fun.  

13. When I am in PE, I think about other things.  

14. When we work on something in PE, I get involved.
15. When I am in PE, my mind wanders.  

16. When we work on something in PE, I feel bored.  

17. I pay attention in my PE lesson.  

18. When I am in PE, I feel worried  

19. When I am in PE, I listen very carefully.  

20. When I’m in class, I feel bad.
SECTION D

- Please answer each question below.
- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th>Not at all true</th>
<th>Very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

1. I am satisfied with the kind of person I am physically.

2. I feel good about the way I look and what I can do with my body.

3. Physically, I am happy with myself.

4. I feel good about what I can do physically.
SECTION E

- Please answer each question below.
- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th>5. Physically I feel good about myself.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. I feel good about who I am physically.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

| 1. I often compare how members of my family are doing with how others are doing. | 1 | 2 | 3 | 4 | 5 |
| 2. I always pay a lot of attention to how I do things compared to how others do things. | 1 | 2 | 3 | 4 | 5 |
3. If I want to find out how well I have done something, I compare what I have done with how others have done.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

4. I often compare how I am doing socially (e.g. social skills, popularity) with other people.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

5. I am not the type of person who compares often with others.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

6. I often compare myself with others with respect to what I have achieved in school.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>
Appendix G

Ethical Clearance Checklist
(TO BE COMPLETED FOR ALL INVESTIGATIONS INVOLVING HUMAN PARTICIPANTS)

If your research is being conducted off-campus and ethical approval has been granted by an external ethics committee, you may not need to seek full approval from the University Ethical Advisory Committee. However you will be expected to provide evidence of approval and the terms on which this approval has been granted.

If you believe this statement applies to your research, please contact the Secretary of the Ethical Advisory Committee for confirmation.

If your research is transferring into Loughborough University and approval was obtained from your originating institution, there is a requirement on the University to ensure that appropriate approvals are in place.

If you believe this statement applies to your research, please contact the Secretary of the Ethical Advisory Committee with evidence of former approval and the terms on which this approval has been granted.

It is the responsibility of the individual investigators to ensure that there is appropriate insurance cover for their investigation.

If you are at all unsure about whether or not your study is covered, please contact the Finance Office to check.

Section A: Investigators

Name, Status and Email Address of Senior Investigators (University Staff Research Grade II and above):
(Please underline responsible investigator where appropriate)

Department:

Name, Status and Email Address of Other Investigators:

Department:

Title of Investigation
A1. Do investigators have previous experience of, and/or adequate training in, the methods employed?  
   Yes ☒ No ☐ †If No, Please provide details below

A2. Will junior researchers/students be under the direct supervision of an experienced member of staff?  
   Yes ☒ No ☐ †If No, Please provide details below

A3. Will junior researchers/students be expected to undertake physically invasive procedures (not covered by a generic protocol) during the course of the research?  
   Yes† ☐ No ☒ †If Yes, Please provide details below

A4. Are researchers in a position of direct authority with regard to participants (e.g. academic staff using student participants, sports coaches using his/her athletes in training)?  
   Yes† ☐ No ☒ †If Yes, Please provide details below

If you have selected one of the answers above marked with an † please provide additional information on how you intend to manage the issues (please continue onto a separate sheet if required), then submit this checklist to the Secretary to the EAC:

Section B: Participants

Vulnerable Groups
Will participants be knowingly recruited from one or more of the following vulnerable groups?

B1. Children under 18 years of age  
   Yes# ☒ No ☐
   (please refer to published guidelines)

B2. People over 65 years of age  
   ☒

B3. Pregnant women  
   Yes# ☐ No ☒

B4. People with mental illness  
   ☒

B5. Prisoners/Detained persons  
   Yes# ☐ No ☒

B6. Other vulnerable group (please specify )  
   Yes# ☐ No
If the procedure is covered by an existing generic protocol which refers specifically to the vulnerable group(s), please insert reference number here

If the procedure is not covered by an existing generic protocol, please submit a full application to the Ethical Advisory Committee

Chaperoning Participants
If appropriate, e.g. studies which involve vulnerable participants, taking physical measures or intrusion of participants' privacy:

B7. Will participants be chaperoned by more than one investigator at all times?
   Yes ☐ No* ☒ N/A†If N/A, please provide details below

B8. Will at least one investigator of the same sex as the participant(s) be present throughout the investigation?
   Yes ☐ No* ☒ N/A†If N/A, please provide details below

B9. Will participants be visited at home?
   Yes* ☐ No ☒ N/A†If N/A, please provide details below

* Please submit a full application to the Ethical Advisory Committee.

If you have selected one of the answers above marked with an † please provide additional information on how you intend to manage the issues (please continue onto a separate sheet if required), then submit this checklist to the Secretary to the EAC:

Section C: Methodology/Procedures

To the best of your knowledge, please indicate whether the proposed study:

C1. Involves taking bodily samples
   Yes# ☐ No ☒ (please refer to published guidelines)

C2. Involves procedures which are likely to cause physical, psychological, social or emotional distress to participants
   Yes# ☐ No ☒

C3. Is designed to be challenging physically or psychologically in any way (includes any study involving physical exercise)
   Yes# ☐ No ☒

# If the procedure is covered by an existing generic protocol, please insert reference number here
If the procedure is not covered by an existing generic protocol, please submit a full application to the Ethical Advisory Committee
C4. Exposes participants to risks or distress greater than those encountered in their normal lifestyle
   Yes* ☐ No ☒

C5. Involves collection of body secretions by invasive methods
   Yes* ☐ No ☒

C6. Prescribes intake of compounds additional to daily diet or other dietary manipulation/supplementation
   Yes* ☐ No ☒

C7. Involves testing new equipment
   Yes* ☐ No ☒

C8. Involves pharmaceutical drugs
   Yes* ☐ No ☒
   (please refer to published guidelines)

C9. Involves use of radiation
   Yes* ☐ No ☒
   (please refer to published guidelines). Investigators should contact the University's Radiological Protection Officer before commencing any research which exposes participants to ionising radiation – e.g. x-rays).

C10. Involves use of hazardous materials
   Yes* ☐ No ☒
   (please refer to published guidelines)

C11. Assists/alters the process of conception in any way
   Yes* ☐ No ☒

C12. Involves methods of contraception
   Yes* ☐ No ☒

C13. Involves genetic engineering
   Yes* ☐ No ☒

* If you have answered ‘Yes’ to any of the above please submit a full application to the Ethical Advisory Committee

Section D: Observation/Recording

D1. Does the study involve observation and/or recording of participants?
   Yes ☐ No ☒ If No, please go to Section E

If Yes,

D2. Will those being observed and/or recorded be informed that the observation and/or recording will take place?
   Yes ☐ No* ☒

* Please submit a full application to the Ethical Advisory Committee

Section E: Consent and Deception
E1. Will participants give informed consent freely?
Yes ☑ If yes please complete the Informed Consent section below.
No* ☐ *If no, please submit a full application to the Ethical Advisory Committee.

Note: where it is impractical to gain individual consent from every participant, it is acceptable to allow individual participants to "opt out" rather than "opt in".

Informed Consent
E2. Will participants be fully informed of the objectives of the investigation and all details disclosed (preferably at the start of the study but where this would interfere with the study, at the end)?
Yes ☑ No* ☐

E3. Will participants be fully informed of the use of the data collected (including, where applicable, any intellectual property arising from the research)?
Yes ☑ No* ☐

E4. For children under the age of 18 or participants who have impairment of understanding or communication:
- will consent be obtained (either in writing or by some other means)?
  Yes ☑ No* ☐ N/A ☐
- will consent be obtained from parents or other suitable person?
  Yes ☑ No* ☐ N/A ☐
- will they be informed that they have the right to withdraw regardless of parental/guardian consent?
  Yes ☑ No* ☐ N/A ☐

E5. For investigations conducted in schools, will approval be gained in advance from the Head-teacher and/or the Director of Education of the appropriate Local Education Authority
Yes ☑ No* ☐ N/A ☐

E6. For detained persons, members of the armed forces, employees, students and other persons judged to be under duress, will care be taken over gaining freely informed consent?
Yes ☑ No* ☐ N/A ☐

* Please submit a full application to the Ethical Advisory Committee

Deception
E7. Does the study involve deception of participants (i.e., withholding of information or the misleading of participants) which could potentially harm or exploit participants?
Yes ☑ No ☐ If No, please go to Section F

If yes,
E8. Is deception an unavoidable part of the study?
Yes ☑ No* ☐
E9. Will participants be de-briefed and the true object of the research revealed at the earliest stage upon completion of the study? Yes ☒ No* ☐

E10. Has consideration been given on the way that participants will react to the withholding of information or deliberate deception? Yes ☒ No* ☐

* Please submit a full application to the Ethical Advisory Committee

Section F: Withdrawal

F1. Will participants be informed of their right to withdraw from the investigation at any time and to require their own data to be destroyed? Yes ☒ No* ☐

* Please submit a full application to the Ethical Advisory Committee

Section G: Storage of Data and Confidentiality

Please see University guidance on Data Collection and Storage

G1. Will all information on participants be treated as confidential and not identifiable unless agreed otherwise in advance, and subject to the requirements of law? Yes ☒ No* ☐

G2. Will storage of data comply with the Data Protection Act 1998? (Please refer to published guidelines) Yes ☒ No* ☐

G3. Will any video/audio recording of participants be kept in a secure place and not released for use by third parties? Yes ☒ No* ☐

G4. Will video/audio recordings be destroyed within six years of the completion of the investigation? Yes ☒ No* ☐

G5. Will full details regarding the storage and disposal of any human tissue samples be communicated to the participants? Yes ☒ No* ☐

* Please submit a full application to the Ethical Advisory Committee

Section H: Incentives

H1. Have incentives (other than those contractually agreed, salaries or basic expenses) been offered to the investigator to conduct the investigation? Yes* ☒ No ☒ If Yes, Please provide details below
H2. Will incentives (other than basic expenses) be offered to potential participants as an inducement to participate in the investigation?

Yes† [ ] No ☒ "If Yes, Please provide details below"

If you have selected one of the answers above marked with an † please provide additional information on how you intend to manage the issues (please continue onto a separate sheet if required), then submit this checklist to the Secretary to the EAC:
Appendix H

Dear Headmaster,

I am a current PhD student at Loughborough University and a Teacher of Physical Education at Wycombe Abbey School. I am hoping to undertake a research project in the area of Motivation in Physical Education. Specifically, I am hoping to investigate reasons why some pupils may lack motivation in PE and subsequently are disengaged in lessons.

I am writing to ask if you would give permission for the children in your care to be asked if they would consider participating in my study. This would involve them completing a questionnaire each week during a unit of work over five week’s duration. The questionnaire will take between 10 and 15 minutes to complete after their PE lesson. The questionnaire has been carefully designed to ensure that it is suitable for the age-group targeted and the study is subject to ethical approval by Loughborough University. All questionnaires are anonymous and parental consent will be obtained beforehand. I have attached a copy of the questionnaire to this letter and a copy of the letter that will be sent to parents. If agreed, I will be liaising with the Head of PE at the start of the summer term.

Please contact me via email or my project supervisor, Dr. Christopher Spray, (contact details are provided below) to let me know of your decision and if you have any queries about the research. If you were able to let me know via email your decision by the 7th May that would be much appreciated.

Many thanks

Yours sincerely,

Rachel Jackson

R.Jackson@lboro.ac.uk 07919 098162
jacksonr@wycombeabbey.com

Contact details for Dr. Christopher Spray:

Telephone: 01509 226339
Email: C.M.Spray@lboro.ac.uk
Appendix I

Dear Parent/Carer

I am a research student at Loughborough University and a Teacher of Physical Education. I am currently conducting research into understanding children's motivation in physical education. The Headmaster has agreed to allow me to conduct my research within the Physical Education department at the school. However, in line with Loughborough University procedures that safeguard good practice, I am also required to ask for your permission for your child to participate in my research. The purpose of the research is to understand more about children's thoughts and feelings in relation to physical education lessons. The research will involve the completion of a short questionnaire after each of their PE lessons for the duration of five weeks. All information collected is confidential and no individual will be identifiable by name in any publication arising from the research.

Please complete the section below and return this letter to the PE staff at the school via your son if you do not give permission for your son to participate in the research. Please contact myself or my project supervisor, Dr. Christopher Spray, (contact details are provided below) if you have any queries about the research.

Yours faithfully

Ms Rachel Jackson

R.Jackson@lboro.ac.uk
Address: Loughborough University, School of Sport, Exercise and Health Sciences, Leicestershire, UK, LE11 3TU.

Contact details for Dr. Christopher Spray:

Telephone: 01509 226339
Email: C.M.Spray@lboro.ac.uk
Address: Loughborough University, School of Sport, Exercise and Health Sciences, Leicestershire, UK, LE11 3TU.

I do not give permission for _______________ Form Group__ to take part in the research being conducted at ..........................................

Signed _____________________________
(Parent/Carer)
Appendix J

Research Project to Explore Motivation in School Physical Education

Participant Information Sheet for Teachers

Main investigator: Dr. Christopher Spray, School of Sport, Exercise and Health Sciences, Loughborough University. Tel: 01509 226339, email C.M.Spray@lboro.ac.uk.
Research student: Rachel Jackson, School of Sport, Exercise and Health Sciences, Loughborough University, email R.Jackson@lboro.ac.uk.

What is the purpose of the study?

The purpose of this study is to examine motivation among students in physical education.

Who is doing this research?

Rachel Jackson (a current PhD student at Loughborough University and full-time teacher of Physical Education) will be conducting the research. Her project supervisor is Dr. Christopher Spray, senior lecturer in the School of Sport, Exercise and Health Sciences.

Once I take part, can I change my mind?

Yes. After you have read this information and asked any questions you may have, we will ask you to complete an informed consent form. However, if at any time before, during or after the sessions you wish to withdraw from the study, please contact the main investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

How long will it take?

It should take about 2 minutes to complete the questionnaire for each student in your class. You will be asked to do this at the end of every PE lesson in one activity block.

Is there anything I need to bring with me?
A pen/pencil

Who should I give the questionnaire back to?

Please return the questionnaires to the research student at the end of the block.

What will I be asked to do?

Please read the instructions carefully and complete the questionnaire as required.

Will my taking part in this study be kept confidential?

Once the questionnaires are collected, the informed consent form with your signature on will be removed to ensure responses are anonymous. All the raw data will be confidential and only the research student and supervisor will have access to the data. The data will be stored safety in accordance with the Data Protection Act 1998.

What will happen to the results of the study?

The results of the study will be compiled and analysed using a statistical software package and used to draw conclusions as part of the research project.

I have some more questions who should I contact?

Rachel Jackson (PhD research student) or Dr. Christopher Spray can assist you with any enquiries or concerns. Their contact details are at the top of this information sheet.

What if I am not happy with how the research was conducted?

Please contact the project supervisor with any concerns. You may also visit Loughborough University’s web page concerning academic misconduct for more information. The link is: http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm.
Appendix K

Research Project to Explore Motivation in School Physical Education

Participant Information Sheet

Main investigator: Dr. Christopher Spray, School of Sport, Exercise and Health Sciences, Loughborough University. Tel: 01509 226339, email C.M.Spray@lboro.ac.uk.
Research student: Rachel Jackson, School of Sport, Exercise and Health Sciences, Loughborough University, email R.Jackson@lboro.ac.uk.

What is the purpose of the study?

The purpose of this study is to examine motivation among students in physical education.

Who is doing this research?

Rachel Jackson (a current PhD student at Loughborough University and full-time teacher of Physical Education) will be conducting the research. Her project supervisor is Dr. Christopher Spray, senior lecturer in the School of Sport, Exercise and Health Sciences.

Once I take part, can I change my mind?

Yes. After you have read this information and asked any questions you may have we will ask you to complete a Willingness to Participate Form. However, if at any time before, during or after the sessions you wish to withdraw from the study, please contact the main investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

How long will it take?

It should take about 10-15 minutes to complete the questionnaire. You will be asked to do this at the end of every PE lesson in one activity block.

Is there anything I need to bring with me?

A pen/pencil
**Who should I give the questionnaire back to?**

Please return the questionnaire to your teacher.

**What will I be asked to do?**

Please read the instructions carefully and complete the questionnaire as required.

**What personal information will be required from me?**

You will be asked to give information concerning your gender and age.

**Will my taking part in this study be kept confidential?**

Once the questionnaires are collected, the Willingness to Participate Form with your signature on will be removed to ensure responses are anonymous. All the raw data will be confidential and only the research student and supervisor will have access to the data. The data will be stored safely in accordance with the Data Protection Act 1998.

**What will happen to the results of the study?**

The results of the study will be compiled and analysed using a statistical software package and used to draw conclusions as part of the research project.

**I have some more questions who should I contact?**

Rachel Jackson (PhD research student) or Dr. Christopher Spray can assist you with any enquiries or concerns. Their contact details are at the top of this information sheet.

**What if I am not happy with how the research was conducted?**

Please contact the project supervisor with any concerns. You may also visit Loughborough University's web page concerning academic misconduct for more information. The link is: [http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm](http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm).
Appendix L

Willingness to Participate Form

A study of pupils’ motivation in physical education

I am a teacher in Physical Education who is currently doing research at Loughborough University. I am interested in learning more about pupils’ motivation in PE. To gather this information, I have put together a questionnaire that contains a number of sections. The questionnaire will take 20 to 30 minutes to complete.

You do not have to fill out the questionnaire and no one will mind if you do not want to do the study. All your answers will be confidential and will not be seen by any of your teachers. If you would like to take part in this research, please read the information below and sign your name in the space provided.

1. The purpose of this study has been explained to me.
8. I have read and understood the information above and this form.
9. I have been able to ask questions.
10. I understand that I do not have to take part in this study.
11. I understand that I have the right to drop out from this study at any stage for any reason, and that I will not be required to explain my reasons.
12. I understand that all the information I provide will be treated in strict confidence.
13. I agree to take part in this study.

Your name

Your Signature

Signature of Investigator

Date
Appendix M

PHYSICAL EDUCATION QUESTIONNAIRE 2011
SECTION A

Please complete the following questions.

1. **School:** .................................................................

2. **Year Group:** ..........................................................

3. **Gender (please tick):**
   - Male
   - Female

4. **What is your date of birth?**
   
   c. Write the date you were born on the dotted line below (e.g. 1st, 14th, 23rd).
   
   d. Please tick below the month that you were born.
   
   - January
   - February
   - March
   - April
   - May
   - June
   - July
   - August
   - September
   - October
   - November
   - December

5. **What year were you born?** (e.g. 1995, 1997, 1999)
SECTION B

- Please answer each question below.
- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th>1a. How often do you experience a lack of motivation to do PE lessons?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
</tr>
</tbody>
</table>

- Please circle below, one number for each statement that corresponds with your reasons for NOT wanting to do PE.

<table>
<thead>
<tr>
<th>1b. I have no good reason to do PE.</th>
<th>Does not correspond at all</th>
<th>Corresponds exactly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. PE is not valuable to me.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>

<p>| 3. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>PE is not important to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>I don’t have what it takes to do well in PE.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>I don’t have the knowledge required to succeed in PE.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>I’m not good at PE.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>The tasks demanded of me are beyond my abilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>I find that PE is boring.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>I don’t like PE.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11.</td>
<td>I have the impression that it is always the same activities every year.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
12. My PE lessons are not stimulating.
1 2 3 4 5 6 7

13. I'm a bit lazy.
1 2 3 4 5 6 7

14. I'm not energetic enough
1 2 3 4 5 6 7

15. I can't seem to put the effort in that is required in the lesson.
1 2 3 4 5 6 7

16. I don't have the energy to do PE.
1 2 3 4 5 6 7
SECTION C

- Please answer each question below.
- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

In the PE lesson today……

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>…..we felt the PE teacher provided us with choices and options.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>2</td>
<td>….the PE teacher had respect for us.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>3</td>
<td>….the PE teacher helped us to improve.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>4</td>
<td>…the PE teacher listened to how we would like to do things.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
5. ...the PE teacher supported us.

6. ...the PE teacher made us feel like we are good at PE.

7. ...the PE teacher encouraged us to ask questions.

8. ...the PE teacher was interested in us.

9. ...we felt that the PE teacher liked us to do well.

10. ...we felt able to share our feelings with the PE teacher.

11. ...we felt the PE teacher was friendly towards us.
...the PE teacher made us feel like we were able to do the activities in class.
<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SECTION D</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Please answer each question below.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- There are no right or wrong answers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Circle one number for each question which best represents your opinions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After the PE lesson today…

1. ...I am satisfied with the kind of person I am
   | Not at all true | Very true |
   | 1 | 2 | 3 | 4 | 5 | 6 |

2. ...I feel good about the way I look and what I can do with my body.
   | 1 | 2 | 3 | 4 | 5 | 6 |

3. ...physically, I am happy with myself.
   | 1 | 2 | 3 | 4 | 5 | 6 |

4. ...I feel good about what I can do physically.
   | 1 | 2 | 3 | 4 | 5 | 6 |

5. ...physically I feel good about myself.
   | 1 | 2 | 3 | 4 | 5 | 6 |

6. ...I feel good about who I am physically.
   | 1 | 2 | 3 | 4 | 5 | 6 |
Appendix N

14th September 2012

Dear Headteacher,

I am a current PhD student at Loughborough University and a Teacher of Physical Education and Psychology at Wycombe Abbey School in High Wycombe. I am hoping to undertake a research project in the area of Motivation in Physical Education. Specifically, I am hoping to investigate reasons why some pupils may lack motivation in PE and subsequently are disengaged in lessons.

Therefore, I am writing to ask if you would give permission for the children in your care to be asked if they would consider participating in my study. This would involve them completing a questionnaire that would take between 20 and 30 minutes on one occasion. The questionnaire has been carefully designed to ensure that it is suitable for the age-group targeted and the study is subject to ethical approval by Loughborough University. It may also involve working with specific groups who show signs of amotivation and conducting small focus groups and interviews.

Please contact me or my project supervisor, Dr. Christopher Spray, (contact details are provided below) to let me know of your decision and if you have any queries about the research.

Many thanks

Yours sincerely,

Rachel Jackson

R.Jackson@lboro.ac.uk 07919 098162

Contact details for Dr. Christopher Spray:

Telephone: 01509 226339
Email: C.M.Spray@lboro.ac.uk
Appendix O

Dear Parent/Carer

I am a research student at Loughborough University and a Teacher of Physical Education. I am currently conducting research into understanding children’s motivation in physical education. The Head of PE has agreed to allow me to conduct my research within the physical education department at the school. However, in line with Loughborough University procedures that safeguard good practice, I am also required to ask for your permission for your child to participate in my research. The purpose of the research is to understand more about children’s thoughts and feelings in relation to physical education lessons and their hopes and expectations towards the transition from primary to secondary school PE. The research will involve a 30 minute interview with your daughter at the beginning of the academic year, followed by a short questionnaire. I will then repeat the interview at the end of the Autumn term. All information collected is confidential and no individual will be identifiable by name in any publication arising from the research.

Please complete the section below and return this letter to the PE staff at the school via your daughter if you do not give permission for your child to participate in the research. Please contact myself or my project supervisor, Dr. Christopher Spray, (contact details are provided below) if you have any queries about the research.

Yours faithfully

Ms Rachel Jackson

R.Jackson@lboro.ac.uk
Address: Loughborough University, School of Sport, Exercise and Health Sciences, Leicestershire, UK, LE11 3TU.

Contact details for Dr. Christopher Spray:

Telephone: 01509 226339
Email: C.M.Spray@lboro.ac.uk
Address: Loughborough University, School of Sport, Exercise and Health Sciences, Leicestershire, UK, LE11 3TU.

I do not give permission for ______________________________ Form Group____ to take part in the research being conducted at ..................................................

Signed _____________________________
Appendix P

Participant Information Sheet

What is the research about?

The purpose of this study is to examine motivation among students in physical education.

Who is doing this research?

Rachel Jackson (a current PhD student at Loughborough University and full-time teacher of Physical Education) will be conducting the research.

Once I take part, can I change my mind?

Yes. After you have read this information and asked any questions you may have, we will ask you to complete a form to say that you are happy to take part in a discussion about your feelings towards PE. However, if at any time let the researcher know. You can stop the discussion at any time, for any reason and you will not be asked to explain your reasons for stopping.

How long will it take?

It should take about 30 minutes to conduct the interview.

Is there anything I need to bring with me?

No

What will I be asked to do?

Listen and answer the questions as honestly as you can.

Will my taking part in this study be kept confidential?

Once the interview has finished, the discussion that has been taped, will be confidential and only the research student and supervisor will have access to the recording.

What will happen to the results of the study?
The results of the study will be analysed by the researcher and will be used to gain a deeper understanding into the feelings that students have towards PE.

**I have some more questions who should I contact?**

Initially contact your PE teacher.
Appendix Q

Research Project to Explore Motivation in School Physical Education

Participant Information Sheet for Parents

Main investigator: Dr. Christopher Spray, School of Sport, Exercise and Health Sciences, Loughborough University. Tel: 01509 226339, email C.M.Spray@lboro.ac.uk.
Research student: Rachel Jackson, School of Sport, Exercise and Health Sciences, Loughborough University, email R.Jackson@lboro.ac.uk.

What is the purpose of the study?

The purpose of this study is to examine motivation among students in physical education.

Who is doing this research?

Rachel Jackson (a current PhD student at Loughborough University and full-time teacher of Physical Education) will be conducting the research. Her project supervisor is Dr. Christopher Spray, senior lecturer in the School of Sport, Exercise and Health Sciences.

Once your son/daughter takes part, can they change their mind?

Yes. After they have read this information and asked any questions, we will ask your son/daughter to complete an 'willingness to participate' form. However, if at any time before, during or after the sessions your child wishes to withdraw from the study, they can tell the investigator. They can withdraw at any time, for any reason and will not be asked to explain their reasons for withdrawing.

How long will it take?

It should take about 30 minutes to conduct the interview.

Is there anything they need to bring with them?
What will they be asked to do?

Listen and answer the questions as honestly as they can.

Will their taking part in this study be kept confidential?

Once the interview has finished, the raw data (audio recording) will be confidential and only the research student and supervisor will have access to the data. The data will be stored safely in accordance with the Data Protection Act 1998.

What will happen to the results of the study?

The results of the study will be compiled and analysed using qualitative analysis and used to draw conclusions as part of the research project.

I have some more questions who should I contact?

Rachel Jackson (PhD research student) or Dr. Christopher Spray can assist you with any enquiries or concerns. Their contact details are at the top of this information sheet.

What if I am not happy with how the research was conducted?

Please contact the project supervisor with any concerns. You may also visit Loughborough University's web page concerning academic misconduct for more information. The link is: http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm.
Appendix R

Research Project to Explore Motivation in School Physical Education

Participant Information Sheet for Teachers

Main investigator: Dr. Christopher Spray, School of Sport, Exercise and Health Sciences, Loughborough University. Tel: 01509 226339, email C.M.Spray@lboro.ac.uk.
Research student: Rachel Jackson, School of Sport, Exercise and Health Sciences, Loughborough University, email R.Jackson@lboro.ac.uk.

What is the purpose of the study?

The purpose of this study is to examine motivation among students in physical education.

Who is doing this research?

Rachel Jackson (a current PhD student at Loughborough University and full-time teacher of Physical Education) will be conducting the research. Her project supervisor is Dr. Christopher Spray, senior lecturer in the School of Sport, Exercise and Health Sciences.

Once I take part, can I change my mind?

Yes. After you have read this information and asked any questions you may have, we will ask you to complete an informed consent form. However, if at any time before, during or after the sessions you wish to withdraw from the study, please contact the main investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

How long will it take?

It should take about 30 minutes to conduct the interview.

Is there anything I need to bring with me?

No
What will I be asked to do?

Listen and answer the questions as honestly as you can.

Will my taking part in this study be kept confidential?

Once the interview has finished, the raw data (audio recording) will be confidential and only the research student and supervisor will have access to the data. The data will be stored safely in accordance with the Data Protection Act 1998.

What will happen to the results of the study?

The results of the study will be compiled and analysed using qualitative analysis and used to draw conclusions as part of the research project.

I have some more questions who should I contact?

Rachel Jackson (PhD research student) or Dr. Christopher Spray can assist you with any enquiries or concerns. Their contact details are at the top of this information sheet.

What if I am not happy with how the research was conducted?

Please contact the project supervisor with any concerns. You may also visit Loughborough University's web page concerning academic misconduct for more information. The link is: [http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing.htm](http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing.htm)

Appendix S

Willingness to Participate Form

A study of pupils’ motivation in physical education

I am a teacher in Physical Education who is currently doing research at Loughborough University. I am interested in learning more about pupils’ motivation in PE. To gather this information, I have put together a questionnaire that contains a number of sections. The questionnaire will take 20 to 30 minutes to complete.

You do not have to fill out the questionnaire and no one will mind if you do not want to do the study. All your answers will be confidential and will not be seen by any of your teachers. If you would like to take part in this research, please read the information below and sign your name in the space provided.

2. The purpose of this study has been explained to me.

14. I have read and understood the information above and this form.

15. I have been able to ask questions.

16. I understand that I do not have to take part in this study.

17. I understand that I have the right to drop out from this study at any stage for any reason, and that I will not be required to explain my reasons.

18. I understand that all the information I provide will be treated in strict confidence.

19. I agree to take part in this study.

Your name

Your Signature

Signature of Investigator

Date
Appendix T

Study 3a Interview Schedule

Semi-structured interview questions

1. Describe your weekly physical activity, including PE lessons.

2. What are your feelings towards PE in school?

3. Why do you feel this way?

4. How much effort do you think you put in to your PE lessons?

5. Do you think PE is important? If so, why? If not, why not?

6. What would make you enjoy PE more?

7. How do you feel about yourself in the PE class?

8. Do you enjoy playing competitive games with your friends? Why/Why not?

9. Do you enjoy working in groups with your friends in PE? Why/Why not?

10. Do you think the type of activity you do in PE affects your enjoyment? Why?

11. What would you change about your PE lessons at the moment.

12. What do you imagine PE lessons to be like in September when you start secondary school?

13. What do you hope the PE lessons to be like in secondary school?


15. What would be your ideal PE lesson?
Appendix U
Study 3a Interview Transcript

1. Describe your weekly physical activity, including PE lessons.
P1: “Um...on Wednesday we have a PE lesson...Um...for half of the afternoon and then we do ICT.”
P2: “In the morning”
P1: “In the morning?”
P2: “Wednesdays inside”
P1: “Oh yeah, Wednesdays inside..and um..
P2: “we do Gymnastics or dancing”
P1: “oh yeah, and um... at home, I don’t sit still basically, I run around a lot...
Interviewer: “ do you?”
P1: “yeah”
Interviewer: “just what in the garden or...”
P1: “um...Inside or outside really”
Interviewer: “yeah? so you like to be active?”
P1: “ yeah I like to run around”
Interviewer: “you like to run around, so you don’t do any sport necessarily?”
P1: “ No not really, well I do like sport, just don’t get into teams or anything”
Interviewer: “ oh okay” (turning to P2) “ and what about yourself?”
P2: “ Um... on Thursday we have an hour outdoor PE and on Wednesday I think we got about half an hour doing dance and gymnastics, and I run around a lot during playtime and at home I cycle at least once a week? and I run around a lot at home as well”.
Interviewer: (turn to P3) “and what do you do?”
P3:(female): on Monday and Thursday at school, on Monday we do indoor PE for half an hour and on Thursday we do outside PE...about an hour...and during home...on Tuesdays I go swimming”
Interviewer: “okay, just on Tuesdays?”
P3: “Yeah”
Interviewer: “excellent”
P3: “oh Tuesdays and Fridays I go swimming”
2. Interviewer: “What are your feelings towards PE in school, so do you enjoy the lessons, do you... and again be honest, do you find them a little bit boring, would you rather do something else”?
P1: “Um...I do like PE but if its just like practicing running 200m I find it quite boring but tag rugby, football, anything really I find it a lot of fun”
Interviewer: “so do you like the competitive sports?”
P1: “Um.... I like just playing, I don’t care about winning really”
Interviewer: “okay”
P2: “Um... I don’t really like doing the races, like the 200m or 600”
Interviewer: “ why is that, is it because you are competing to win? You don’t like winning or...”
P2: “yeah, im not very good at it (laughs), and its quite boring too, your just running, yeah your not really doing anything apart from running. Um I quite like the team sports, where you have to work in a team”.
Interviewer: “What do you like about team sports?”
P2: “Well you are just not doing it on your own, your just working together”
Interviewer: “So you like doing activity with people”
P2: “Yeah”
Interviewer: “yeah”
P3: “Um...I don’t really like running, but um... the other sports I like cricket, rounders, tennis. I like the other ten... I like the other sports but I don’t really like running...”
Interviewer: “What don’t you like about running?”
P3: “Running around like loads of times”
Interviewer: “Okay so just the repetitiveness of running”
P3: “Yeah”
Interviewer: “Do you like running like in a game, you like running in rounders?”
P3: “Yeah I like that, that’s all right, yeah that’s ok”
P1: “We will like go and spend the whole afternoon today just playing rounders, I think fielding is better because you just running around...”
Interviewer: “Yeah, and you enjoy that?”
P1: “I do”
P2: “And batting”
P1: “Batting...actually yeah, I can’t really decide”

3. Interviewer: “How much effort or how hard do you think you try in your PE lessons, so this is not outside of PE, this is in your lessons, and um... it’s not just in the summer term, in general, and be honest, how hard do you think you try”? 
P1: “Um”...I try my best but sometimes when it is just running I don’t really care”
P2: “Um... I try really hard in some of the sports but I know running, I just feel bored and just...”
Interviewer: “That’s interesting so do you think the task that you are doing will determine how much effort you put in?”
P2: “Yeah,”
P1: “Last Thursday we went to a sporting competition and um...we didn’t stand still once, we were just constantly running around.”
P2: “I did table tennis”
P1: “I was playing rugby”
Interviewer: “so the more interested you are in the activity the more you like to do things, and do you have anything else to comment, are you the same?”
(looking at p3)
P3: “Generally the same...its just (pause)... I try a bit hard but well when its running I quite, cant be bothered to try I just run”
(everyone laughs)
P1: “There is no point but run”
Interviewer: “Yeah”
P1: “But in rugby and football it’s a lot better”
Interviewer: “So maybe athletics is not the right activity”
P3: “Yeah but other sports I enjoy”
P2: “I don’t mind sprinting because that’s quite short”
(Everyone laughs)
P1: “Yeah”
Interviewer: “Are there any other activities you don’t enjoy?”
P3: “Rugby”
Interviewer: “would that be an activity you would not necessarily put effort in?”
P3: “No…I don’t know actually”

4. Interviewer: “Do you think PE is important to have in school? If so, why? If not, why not?”
P1: “I think it is important...um...im not really sure why but I know it is definitely important to keep you healthy and... um... and maybe if you have a job when you are older, if you didn’t do PE in school, you might not become an athlete or something, or you could just work in an office” (giggle).
(everyone laughs)
P2: “Im not really sure... I think it is important but...
Interviewer: “why do you think it is important?”
P2: “so you don’t get ill (laughs), I don’t know...”
Interviewer: “why would you get ill if you didn’t do it?”
P2: “I don’t know”(laughs)
Interviewer: “so you have not necessarily been told the importance of PE”
P2: “No”
P1: “not really, we just do it. Like since the first year we would just be told get changed and we are going outside”
P2: “Yeah”
P3: “I think PE is important because when your older and you know how to swim and if like someone is drowning you can like try and save them or if PE is like riding a bike is on your CV then it might be good for you..when you do your job.”
P1: “This may seem strange but, PE, you can actually get a job in an airport because you just run around a lot just getting to different stations and stuff”.

5. Interviewer: “What would make you enjoy PE lessons more?”
P1: “Um...I would like it to be more co-operative so more...and less of the just against each other all and all because I don’t really like that”.
Interviewer: “ok, what do you mean by co-operative?”
P1: “um... a team, teamwork because it improves your team building skills and your PE”.
Interviewer: “if your working in a team would you not be competing?”
P2: “Yeah but..”
P1: “Yeah we would kind of be competing but not just by yourself because that’s a bit worse”.
P2: “Yeah”
Interviewer: “okay so rather than competing against one person...”
P1: “Yeah...”
Interviewer: “you would rather be in a team competing against another team, so you are with other people”
P1: “Yeah”
P2: “um...um... I don’t like being forced into having to run like 6 laps of the track...yeah”.
Interviewer: “What would make you enjoy it more then?”
P2: “You get to choose how much you want to do (giggles)
Interviewer: “okay, that’s important so you get to choose what you do.”
P2: “Yeah but there’s a limit which you have to do like you have to do one lap”
P1: “I remember one sports day um... to find out who would do what um...they made us all do the 600 and a lot of people dropped out and they got quite upset”

Interviewer: “why did they drop out? Because they could not do it?”
P1: “Yeah”
P2: “I like it better if you know like summer sports there’s only like boys allowed to do it and sometimes only girls allowed to do it”.
P1: “I think netball is quite fun but it’s a girls sport”
P2: “Yeah your not allowed to play it”

Interviewer: “so you would like to some girls sports like netball?”
P2: “Because at Hershal (secondary school) we are not allowed to play rounders, only girls allowed to play it”.

Interviewer: “and does that bother you then?”
P2: “Yeah”

Interviewer (turn to P3) “What would make you enjoy PE more?”
P3: “ Um...I don’t know really but...”

Interviewer: “anything that could be done differently that would make you enjoy it more?”
P3: “Um... (long pause)...uh.. I don’t know, the same as what they’re saying”

6. Interviewer: “How do you feel about yourself in the PE class, so do you feel good about yourself when you are doing PE or do you feel embarrassed or not very confident?”
P1: “I know im not awful, but I know im not the best definitely”

Interviewer: “so do you compare youself to others in the class then?”
P1: “I don't really compare myself, I don't like doing that”
P2: “Im not very good at it, just find it a bit...its fun but I find it a bit hard sometimes”

Interviewer: “the activities hard?”
P2: “Yeah”

Interviewer: “how does that make you feel then in the lesson?”
P2: “I don't know”

Interviewer: “do you shy away from things?”
P2: “Yeah probably”

Interviewer: “does it make you not want to do the activity again?”
P2: “Yeah”
P1: “Cross country...”
P2: “I hate that”
P1: “Im usually at the back”

Interviewer: “does that make you dread cross country then?”
P1 and P2: “Yeah”

Interviewer: “cross country is probably something you would do in secondary school in the winter term so what feelings would you feel then?”
P2: “ I would probably want to be sick that day”

Interviewer: “really?”
P1, P2 and P3 all say “yeah”

Interviewer: “why?”
P2: “It's just really tiring and you like always come near the back”
P1 and P3: “Yeah”
Interviewer: “but does that matter?”
P1: “Last year I did try to think no one is judging then we get given cards saying whose 1st, 2nd 3rd”.
P2: (Laughs)
Interviewer: “so that bothers you then because they are recognizing the positions”
P1: “Yeah definitely”
Interviewer: “if they weren't and you were just able to run it....”
P1: “then I would run it”
P2: “but sometimes it is a bit too long”
P1: “I think we run...how far? We run a massive field, its like twice the size of ours”
P2: “We run like 2 laps of it..”
P3: “I know I was so....”
P1: “its something like 800 or 1000m maybe...i don’t really know”
P3: “I like the...I do...I don’t really like doing cross country but I like it when they call my name out when I run at the end..”
P1: “yeah they encourage you”
Interviewer: “what do you like about that then?”
P3: “when they say my name”
Interviewer: “why do you like that?”
P3: “I don’t know because they encourage me to run”
P1: “It keeps you running”
P3: “what was the question?”
Interviewer: “how do you feel about yourself in the PE class?”
P3: “um...sometimes I feel embarrassed but when I do it its um...I know how to do it and then I feel a bit scared but when I do it I just know, I don’t know...that I can do it though... I just feel a bit embarrassed”.
Interviewer: “feel embarrassed to start with?”
P3: “yeah but I know in the end”
Interviewer: “why are you embarrassed?”
P3: “Im embarrassed because of the whole class watching”
Interviewer: “is that just cross country?”
P3: “no its PE sometimes and um... but when I do the PE, the class the sports we have...I can do it but...that’s it”.
P2: “Sometimes like, people think your really bad at it and they just stick you in a place where you cant really do anything really”
P3: “yeah”
Interviewer: “what do you mean, give an example”
P2: “So in football, there is like somewhere where the ball hardly goes, like somewhere at the back somewhere..”
P1: “Yeah”
P1: “In football I usually...no one passes it really”
P2: “Yeah”
Interviewer: “why do you think that is?”
P1: “Um...they don’t think im good I think”
P2: “Yeah”
Interviewer: “why, how does that make you feel?”
P1: “Upset”
P2: “Yeah”
Interviewer: “and do you think you are good? Do you enjoy football?”
P1: “I do, but um...”
P3: “Sam what he said, um...when we do sports day, or if like...put you at
 somewhere else, we cant get the ball like, when were playing like...I don’t know
 what’s it for where you throw the ball to the other person...whats that called?”
P1: “Basketball”
P3: “Oh netball, girls and boys play it”
Interviewer: “basketball”
P3: “we...they never pass the ball to me...yeah same like them, they always put you
 at the back or somewhere..so you cant get it”
Interviewer: “who puts you at the back?”
P3: “the team members...yeah the team captain
P2: “yeah they all have a captain of each team,“
P3: “cause they don’t think that you can do it and your rubbish at it so they don’t
 know...they’re just trusting themselves”
P1: “during netball, im not usually passed to but you cant snatch the ball out of
 their hands but a lot of the time when they pass I just know I wont get it so I
 just run in and grab the ball and um... I have scored a few baskets but people
 just ignore me and don’t pass the ball”
P2: “yeah, netball, im quite good at it but people..um..it like don’t pass because they
don’t think you are going to get it.”

7. Interviewer: “what do you imagine your PE lessons to be like in September
 when you start secondary school?”
P1: “Um I expect in the running lessons you will have to run further but the team
 ones like netball and everything...I don’t know how they can make that uh
 more strenuous and... but...because..”
Interviewer: “how do you think it will be different from here?”
P2: “um, well during PE lessons you will be split up from boys and girls and you do
different sports and it’s a lot harder”
Interviewer: “why do you think its harder”
P2: “you run more..your bigger
P3: “I think it will be much more harder to do the running because in our new
 school there was a big big..its like the cross country um the field”
Interviewer: “a longer course?”
P3: “yeah, and um..and when your doing, maybe when were doing like choosing
 the groups, people might choose and we might be left out some of us so might
 be different if they choose instead”
Interviewer: “what the teachers choose groups?”
P3: “no I mean like the kids, the team captain”
P1: “last week, Thursday, um...I noticed the A team has all the people who actually
 played the sport and who were really good at it, but the B team were just..like
 they chose a bunch of people and just put them in teams. So are team weren’t
 very well but we worked together and we did do quite well.”
P2: “Yeah and they’re the people that are better at it they don’t really like not very
 good at teamwork, they just do everything by themselves”
P1: "um...one of my friends Jack Holderway um...he trys to do it by himself but cause he thinks he is good, but sometimes he cant, he just needs a team but he cant except that so..."

Interviewer: “is he good?”

P1: “he is”

P1: “It was the rugby in team A, whenever he got the ball his team were going ‘pass it’, ‘pass it’. He would try to get there by himself. Our team um was basically trying to get to the try line as far as we could, then passing it as people are surrounding us, so we did get a few trys”.


P1: “I like doing it friends more but I don’t really mind, like I do prefer it with friends but when it is just normal people, I know them so I just...still do it

Interviewer: “so in secondary school, if they split you up and put you into mixed ability groups, and split up from friends, would that matter to you?”

P1: “It wouldn’t really matter much but..yeah it wouldn’t really matter but I prefer to be with my friends”

P2: “yeah I would prefer to be with my friends because they actually pass to you and they actually let you do something”

Interviewer: “so support you?”

P2: “yeah”

P3: “I would rather be with my friends but..it wouldn’t. I would choose the friends more because they help you and usually that..if you say to yourself your rubbish then they will like say that ‘stop saying that’ and like help you and ...that’s it”.

10. Interviewer: “What would be your ideal PE lesson in secondary school?”

P1: “I would like it to stay as it is but..”

Interviewer: “which is what?”

P1: “um..not too difficult but the running I think could change a bit because I don’t really like it.”

Interviewer: “okay so athletics and track events”

P1: “yeah”

P1: “but um... the team work, rugby and netball, um..I would like them to stay the same and um..yeah, or maybe more teamwork”

Interviewer: “at the moment you are boys and girls in lessons together. Do you think it is going to change having all boys in your lesson?”

P1: “I would prefer it to stay boys and girls”.

Interviewer: “why?”

P1: “im not really sure but I would prefer it”

P2: “me too.. its because um.. I don’t know. I would prefer if it was more like primary school because the court is smaller so you don't have to do as much but you get the ball more because it depends where you are, but if it is really big you hardly going to get a ball because they will have to come all the way over to you”.

Interviewer: “but your going to get bigger, so as you get bigger the court will get smaller...”
11. Interviewer: “you will have one specialized PE teacher does that excite you?”
P1: “kind of does, but because they are experts, their going to be tougher and like the lessons might get more difficult because...Mrs Spooner is an expert but shes really kind”
P2: “she lets everybody have a chance”
P1: “yeah”
P1: “kinder teachers, I like them”
P2: “yeah cause sometimes you see the TV they are really strict”
P1: “yeah they’re horrible”
P3: “Um...no but I wouldn’t like it if they were to do more running than the other sports, like, like it if less running and more like dodge ball and other sports..dodgeball, yeah but sometimes they hit you purposefully, maybe”
P2: “they throw it too hard, sometimes they get too..”
P3: “yeah”
P1: “its definitely fun, like in dodgeball..in running, you get quite tired out from just running and its generally not very fun, but in dodgeball you get tired out but you are having fun when you do it, so I like that, the more you get tired out, if you get tired out it doesn't matter, it depends what sport you are doing, because if its just running and you get tired out, its because you have to, but dodgeball, you could either just stand still or just keep moving like what I do so..”
P2: “I can dodge the ball but I cant throw it”

12. Interviewer: “are you nervous about doing PE in your secondary school in anyway and if so why and why not?”
P3: “im a little bit nervous of the like the class, the kids, there because they might say im rubbish, not that good um..and I don't, they don't believe, they don’t trust themselves and say that im rubbish...yeah”
P1: “um...i haven’t really thought about it but im not very worried, its just how the teachers will be because I know Mrs Spooner and I like her but new teachers, new rules might be a bit more scary and like Ishak said to me, were doing contact rugby and normally we just do tag and we have to pull off the tag and be in contact and we run in with the ball and im just worrying about my tags getting pulled off. Im going to be piled on by people..”
P2: “yeah”
P1: “its going to be horrible”
P2: “im not going to be able to catch the ball”
Interviewer: “could your PE lesson turn you off doing sport outside of school?”
P1: “it could but I highly doubt it will because it wont change too much and I hope the teachers will be kind and they wont just be really mean, and in contact hopefully I will be able to dodge”
Interviewer: “will it stop you from wanting to try out for the team?”
P2: “yeah”
P1: “probably because I will just get beaten up and then think no, never”
P2: “yeah because its like, a bit like, I prefer tag rugby because all you have to do is run as fast as you can and try not to let people take your tags off but then um..when you do rugby in secondary school, they are just all going to be just
beating you up and take the ball off you so im just not going to even try and get the ball.”
Interviewer: “What other sports would you like to get involved in then?”
P2: “basketball?”
P1: “um..but basketball and hopefully a dodgeball team because that will be really fun and this isn’t really..it is a sport, but I like golf, but that’s less tiring. Its fun, its relaxing like Sava said”.
Interviewer: “what don’t you like about getting tired”
P1: “um..other people don’t and they are like ‘oh your tired out’, or ‘your pathetic’ when were all different”
Interviewer: “being tired is your fitness, so its good to be tired”
P1: “yeah its good to be tired”
P2: “um its like, I don’t want to get too tired out because im going to have to walk home as well, my feet ache by the end of the PE lesson and its like really hard tow walk to the car”
(everyone laughs)
Interviewer: “does that mean you then have to do more fitness?”
P2: “yeah but my feet really hurt at the end of it. Im not tht tired its just my feet really hurt so I cant walk”
Interviewer: “maybe you need more comfortable shoes”
P3: “the teachers might be stricter like..they make..like if you like stop running they might make you run a bit more..”
P1: “they will shout at you and be like ‘come on..’
P3: “yeah and they might make you run more. When were doing PE here, sometimes he makes us run loads of laps…”
P2: (laughs)..yeah”
Interviewer: “and do you have to do it?”
P3: “we do it 6 or 5 times and yeah and when we were with Miss Spooner, its more fair, she lets us run once, like a warm up and then we start and do more, but if you walk in next school you might have to run a bit more and when you do it for Mr Ridges he makes you do more, doesn’t he?”
P1 and P2: “Yeah, yeah”
P1: “Mrs Spooners more…”
P3: “kinder, nicer but she…”
Interviewer: “do you enjoy it more when the teacher is kinder”
P3: “yeah they encourage a bit more”
P2: “it would be nice if they let you drop out if you are really tired, it would be nicer if they could let you stop when you get really exhausted”
P1: “Rest”
P2: “yeah or have a break.but..”
P1: “When we were practicing for the 600 they did let us drop out, I got to like the final lap then just collapsed, I just walked out the edge..”
P2: “I managed to do 2 laps and then stopped”
Appendix V

Study 3b Interview Questions

1. Describe your weekly physical activity in primary school including PE lessons.

2. What are your feelings towards PE in primary school?

3. Why do you feel this way?

4. What do you enjoy about PE?

5. Is there anything that would make you enjoy PE lessons more?

6. What do you dislike about PE?

7. How much effort do you think you put in to your PE lessons? How hard do you try? Can you give an example of when you try hard?

8. Are there any activities you do in school you dislike and if so what are they and why don’t you like them?

9. Do you think PE is important? If so, why? If not, why not?

10. How do you feel about yourself in the PE class?

11. Do you believe you have the ability to do well in PE. If so why? If not, why not?

12. Do you enjoy playing competitive games with your friends? Why/Why not?

13. Do you enjoy working in groups with your friends in PE? Why?/Why not?

14. Do you think the type of activity you do in PE affects your enjoyment? Why?

15. What would you change about your PE lessons at the moment.

16. What do you imagine PE lessons to be like now you are in secondary school? Is there any difference?

17. What do you hope the PE lessons to be like in secondary school?

18. Are you nervous about doing PE in secondary school? If so, why? Or why not?
19. Has your PE lesson ever turned you off doing an activity? If so why?

20. What makes a good PE teacher?

21. How do you think your teachers in primary school differ from secondary school teachers?

22. What would be your ideal PE lesson?
Appendix W

Study 3b Interview Transcript
Primary to Secondary Transition - Year 7 beginning of term

1. Describe your weekly physical activity in primary school?
P1: Um...well we usually have about two about one PE lesson and one Games lesson and usually PE is um.. gymnastics and things like that and then Games is the proper sports so hockey and... um.. personally I don't do anything out of school, but...
Is there a reason for that or...?
P1:...No I would if I could but I just have lots of things..and I need to get my brother and things from school...
Right so time is an issue.
P1: Yeah
P2: Well I basically the same as her but I used to do clubs to try and get into the teams and I used to try and work around that. So I used to do the netball and the hockey and I did have dance lessons at my local dance school so.. I used to try and juggle that as well.
So you did quite a lot outside of school
P2: Tried to yeah..
P3: I did the same like lessons, um.. but I did, I did netball club, hockey club, rounders club, Badminton and we also did swimming um.. and yeah I think I had some more but I cant remember...
P4: Im basically the same as the other Lizzie, I don't really do much out of school because of time and um.. and I, I enjoyed it quite a lot there just wasn’t enough time.
Now I would like you to discuss with me what your feelings are towards your PE lessons in primary school. Be as honest as you like, how do you feel about them, what would you do differently in your PE lessons, do you enjoy it?
P1: Um... I really enjoy the PE lessons..um...I think, I might not necessarily be good at them but I still enjoy them and I like hockey and things...
What do you enjoy about them?
P1: Um... just sort of being in the whole sort of atmosphere of having everyone around and they are all sort of they think... they are trying to get everyone ready and trying to make sure everyone knows what they are doing, then when you actually play the game it’s a lot of fun as well so..
Is there any activity you prefer more than others?
P1: I really like rounders...um, I just like it cause, you know you have people cheering you on and saying ‘go on you can do it’ you know and its nice.
So you like being part of a team?
P1: Yeah
P2: When it came to gymnastics I would be like ‘oh god its gymnastics and id be like ‘ooh god stretch.’ and it wouldn’t really work out that well and they’ll be people like flipping across the mat and id be in the corner, but when it comes to tennis I try to do my best, doesn’t always work out (laughs) but I think that is all you can really do isn’t it.
No definitely, just going back to gymnastics is it because you felt that you were not able to do it as well as other girls in the class?
P2: uh...yeah probably because they were all in the team and had been doing it, I did do it when I was really little but I don’t really consider taking it up again cause don’t really...
So how do you feel before gymnastics lessons? What would you be feeling?
P2: A little bit nervous, I would look forward to it but the only think I wouldn’t like is where they’re stretching and they’re like get down to the splits and you hear this massive crunch and then are like..’oh my god that really hurt’..but that’s it I don’t really mind cartwheels and roly polys but that’s pretty much it.
Ok
P3: I really enjoyed because I was in B teams mostly. I really enjoyed having the team around because you kind of get closer by playing...and they were really fun and I enjoyed all the PE lessons and Games lessons...and it..it was just like fun it wasn't like it was like getting out of lessons for, like sometimes just to have, like to do stuff.
Is there any particular activity that you like more than others?
P3: Um... I like rounders and netball quite a bit and I also like doing badminton, for a couple of weeks.
So what do you like about those sports?
P3: Um...well they kinda like...badminton, no um... netball and rounders you get all the like team spirit and stuff and its fun and ...and... badminton is just generally um... hitting...
Ok great
P4: I really like the PE lessons but when it got to badminton I was like...no, I cant do that..
So did you not enjoy those lessons because you could not do it?
P4: It was just really frustrating..it..I practiced at when I went to centre Parks with my auntie and everything but... then apart from that I don’t really enjoy it because it was really hard and I just don’t like badminton.
What were the activities that you did enjoy?
Um... I liked rounders and gym
So were you good at those sports?
Um... no but I enjoyed them because I like gym because its really fun and I like rounders cause you all play as a part of a team, even the opposite team are just like ‘yeah’if they are your friend.
What do you dislike about PE?
P1: um...the thing...I think its just not being um...sort of build for PE really...it doesn’t help if you know what I mean cause you can be really good at PE and then you can be really...you enjoy it.. but you still think that you are not very good and you know...its...I always think that you know...if I do um... im...not that good at gymnastics I don’t necessarily like it but um... I just don’t think im the right person for gymnastics cause I cant stretch, I cant really do that sort of thing, so... that's what, I don’t really...
So particular sports where you feel you don’t have the right build for it you find difficult?
P1: Yeah, yeag
Right ok
P2: Are we talking about Games as well?
Yes PE and Games

P2: What I don’t like about Games is that it was really quite long and I really didn’t enjoy hockey at my old school cause I was always the one that was in the back and kind of when I was doing it really well they weren’t looking and when I wasn’t they were looking so its kind of like…oh gosh… but um…

Is that cause there were a lot of you together?

P2: Yeah and it was always the same people in A thats obviously because they are really high standard, but I try to make it to the practices and I find it like quite unfair how im still in the background with my hockey stick.

P3: I do like most of it but I think the only part that I didn’t actually enjoy was the x-country because its just….I can do like sprints and stuff but x-country just is not my thing…um..but after all the practices it was alright even though I didn’t really look forward to it that much, well, hardly any of us did.

A lot of girls say that, what is it about x-country?

P3: I think its…I don’t think I am fit enough to run 800 or more, cause it just makes me really…well by the time I get to the finish line its like (sigh) and I feel a bit dizzy and stuff, but it was good, but when I did the Burley run I surprisingly came third in the open race, but I think it’s just the feeling of you going to get really tired out (laughs) and then…yeah

So you don’t like that feeling

P3: No

P4: um.. I don’t really like the hockey because it was like really annoying and it always really hurt my back and they would say ‘oh your holding it wrong’ and then I would hold it differently and it still really hurt me and then they just go ‘you’ll be fine’

Is it just that then? Is it just because it made you feel uncomfortable?

P4: It made me feel uncomfortable, I didn’t really like it um.. I don’t think im…I just don’t like it.

Now I would like you to tell me how much effort you think you put into your PE lessons in primary school. Be honest, how hard do you think you tried?

P1: I think I tried pretty hard but not the hardest I could. Um.. I think eh, yeah I think im alright, im not really really...

What would make you try harder?

P1: Probably um…. (pause) uh…well I think trying..If you try harder then you can get better but sometimes your so sort of your so overwhelmed of what you got to do so…x-country, you sort of think ‘oh’, you know you got to do that run for about 400m or something, you just think ‘mnnnn I don't really want to do it’. I think that just makes you feel, ‘oh well I cant do it so there is not much point putting effort into it. So…um…so I think just believing that you can do it would make it a lot easier, but its a lot harder than it sounds.

No your right it is. Ok thank you.

P2: Er, well when it came to like x-country and like stuff like that I used to warm up and I used to put all my energy into it and when it came to actually playing the sport I already be tired out (laughs) so it wouldn’t really be the best start, but now im trying to try less hard in the warm-up but when I come out im like ‘oh my leg really hurts’.so probably if um… you did 50/50 but still kept your energy up and went to bed earlier I found out (laughs) it would help.

P3: I think im kinda the same but I think I try better or like my best when its like a sport I really enjoy and then if, kind of if it isn't then I don’t think I put all
my best into it. I think its cause I get tired and don’t enjoy it so I don’t see the point so...its kinda the same as them in a way.
P4: It really depends what I am doing because if I like it then I wont put my full effort in because otherwise if I put 100% in then I get really tired and don’t like that anymore but then like with things I don’t really like, ill try harder to try and become better and like it more.
Do you think PE is important?
P1: I think it is important because if we didn't do x-country or if we didn't do certain sports we wouldn't be fitter and we’d find it hard just to walk to the shop and back or something like that and um...so I think it is important to um..do PE and things like that to keep fit and just have fun sometimes.
P2: Yeah basically to keep fit as well, but some people they find sport is more of their strength than academic and others think the opposite and some people think music so its basically your strength and if people, if games is your strength then obviously its important to you because you want to be the best you can be but its still is important otherwise we’d all be fat people sitting on the sofas eating junk food and thinking ‘why am I doing this’, but yeah it is important.
P3: I think the same it keeps you fit and stuff and also I think it brings you together a bit more with other people and it can be like when you are older you can get into running and that will help you keep fitter so its kinda like giving you options in life.
P4: I think its really important because some of us may not like it but otherwise like chloe said we will all get really fat and will have to get one of those scooters just to like walk across the road or something and it wont be very good so PE is really good so we are not just like...we are actually doing something while we young and then we get into it when were older.
Do you believe in yourself that you are able enough to do well in PE? If so why? And if not why not?
P1: Um...personally I don't think that I am brilliant at PE um... I still enjoy it but I don't think im brilliant and I think um...its just... I think most people they find it very hard to sort of think that they are alright and ok and they don't have to um...do things to try and make them feel better about themselves.. and I think that sports its just...its I do enjoy it but I still don’t think im brilliant at it and I don’t think that im the right sort of person to do it if you know what I mean.
Do you think you can improve your ability?
P1: Um...well im trying to improve er.. how to... I don’t really know.. how to improve the thoughts and make yourself believe that you can do it and sometimes I don’t think that and I feel that I cant do that...I don't know.
P2: I think if you set your mind to it then you can pretty much do anything but it always used to make me feel upset when I get put with an A team and I think ‘oh yes we have a chance’ and I hear them say ‘oh great im with all the c teams’ and it made me feel really like ‘oh dear’ (laughs), not that good then am I, and I try to get better but its always as I said the same people and they are always like really strong and there is not a fault in them and...
So do you compare yourself to other people a lot then in your class?
P2: Well... not when it comes to academic, I try and focus to my work but when it comes to PE I try to like compare myself to the A team and ask whats their strengths and their weaknesses and if so I can try and like beat their
weaknesses but probably not their strengths but kinda of thing like that but I don't want to compare but I do.
P3: I think I do, cause I kinda think I can deal with it, its not that im the best, its kinda like I can do it and its fun and even if all the A teams get picked as the A teams then I don't really care because I once got the chance to be in the A team and they kinda swopped people and its where you are and its fun and kinda the right bit for you to do it in, because if you were like in the A team all the time, you probably wouldn't be able to do as much as they could so it would be more confusing but..and I think its fun and its I can do it probably.
P4: No…I don't think I can do it. I enjoy it but..i don't think im built for it. Im more academic then I am sporty.
Do you think you can change that in any way or not?
I try but I don't think it makes a difference.
Why not?
Cause I always compare myself to the best and go 'oh I never going to be as good as them'. I don’t think I believe in myself any time.
Does that make you give up slightly then in lessons?
I still do try really hard but then I think they stil try really hard as well and im never going to be as good as them.

Do you enjoy playing competitive games with your friends?
P1: I enjoy playing competitive games with my friends because I think that being in a competitive atmosphere, I mean if we didn't have competitive people around us and it was all just 'well you know, you do that and I'll do this then it would all be a bit boring, but sometimes its quite fun to sort of play a game and you feel you really have to try your best and then when you don't you still know you tried and you still did it but um.. you know, you know people arnt going to go 'oh you didn't do it right', um…’
Your friends are quite supportive....
P1: Yeah, yeah
P2: We used to play house sports in our old school which was quite competitive, but I really like playing competitive because then you get the sensation when you win like 'ha loser, you so lost...' but like when you lose your like 'yeah we wernt trying anyways, so like, we let you win' but I find it really fun because then you get a feel for how good other people are and how you can be stronger and how like..how the real world is because if there was no competitiveness and everything ended in a tie then it would be 'boring cause there is nothing to play for.'
P3: Its kind of fun being a winner and a loser in a way cause if you're the winner its of cause great cause you're the winner, but if you're the loser its all right because you know you have done your best and everyone is really supportive and even the team that win say you did really well and stuff, and its fun playing like that and then when you go to other schools and do it,um it is more intense cause normally you would think they were cheating if they did win, but its still fun because you get to have the experience of playing against other strengths you don’t know about and yeah...
P4: I think you do have to be competitive cause um.. even when you do play against other teams, other schools ...I only played in it once or twice but they always went 'hip hip hooray' even if they did lose, and its just building up a bit of fun to go 'we won' and you go 'we let you win', ‘no you didn’t we beat you’,
'no you didn't we let you' and its just really fun to play against other people even if they are like your best friend.

P2 – leaves

What were your expectations in PE coming into secondary school? How did you feel?

P1: Um... well I was excited about secondary school um... and I did sort of think that there will lots of other...sort of bigger girls that might, well not saying anything but well, might be a bit better or you try and umm.. you try and be...try and...umm I don’t know... try and be like them. So I was excited about lots of the new sports that we hadn't done previous school um.. and eh I just thought that there would be lots more opportunities to do things I enjoy in sports and things whereas the other school you didn’t really um.. you had to, it was only a couple of clubs, it was hockey, and rounders and netball and things and that would be it, but here you get to do rowing and things like that.

P3: I was kind of excited because I knew that we would do more, longer lessons, not like longer together but like longer like because you have different ones and um...and you also have all the other clubs and um... and its kind of nice meeting all the new people and getting to know their strengths and stuff and its... yeah

P3: When I heard about the sports I was like, 'no they're going to make us work harder they're going to limit us to stuff' but then its actually easier then I thought, I think its easier then the other school and its much wider range.

Why is it easier?

P3: I don’t know I just really easy now like before I found like hockey really hard but know im like well that’s a little bit easier, not much but...so

What do you think makes a good PE teacher?

P1: Umm I think a good PE teacher is someone who supports you, who um.. doesn’t judge you in any way at all um.. treats you all the same and sort of, if your not good at one sport, they don’t tell you that, they try and help you and that and show you what to do and um... you know say if I was holding my hockey stick wrong, um... the teacher would come up and just say ‘ ooh um... maybe the better way is to hold it like this’ and then show you how to hold it properly and um.. its just a lot easier than saying ‘ your holding it wrong you have to hold it like this’... cause usually sometimes you just think ‘oh ok’...um I feel a bit sort of intimidated now but I think what makes a good teacher is someone that just believes in you and thinks your good no matter what.

Are the PE teachers in primary school different to here?

P1: I think at the primary school they were , they weren’t, they were all of that but they were also, they were a bit um.. cause they worked with the younger years as well they did sort of, not really treat you like that but they try and um.. you know, they show you and then say ‘ooh don’t worry, and then I find myself going ‘oh no tell me how to do it properly, tell me this and you know I don’t mind just tell me how to do it’, and they try and do it but ..like you know...like that.

P3: Ive had a really good experience with my old teachers and now um... yeah cause like they need to support you and stuff and ive learnt lots of tricks, like a came in two years ago to the junior school not knowing hardly anything about netball, hovkey and rounders and I kind of in my first year worked my way up to the A team in rounders and B team in netball...so I think it always helps to go
to the clubs and stuff but they are all really supportive and they kind of teach you well.
P4: I think a PE teacher has to be really fair, not like ‘you suck’ ‘these girls are better than you’ ‘you get put in the E team’. They have to be fair and like strict but not really really strict cause they cant really let you just go ‘wave your hockey stick around’ cause um... someone might get hurt?

Do you think the teachers differ from primary to secondary?
P4: yeah cause the senior school treat you like and adult and primary school is just like ‘oh, well don’t worry, you do it like this and then, and then the high school, goes ‘oh you do it like this’ and not treating you like you were younger.

What would be your ideal PE lesson?
P1: I think rounders would be the best one for me.
What playing games?
P1: Playing games but with people you know cause with other schools, we used to play against other schools and you always feel a bit ooh you know I hope they don’t go ‘oh well’, you know ‘we beat you’ and I think just with other people around you who know you and you know them, so you feel a bit more comfortable about what you are doing.
P3: I have three, netball, rounders and dance cause there like enjoyable and its fun to and
P4: I think it would be dance and ice skating cause I really like dancing but anything Lily does I can make it classical because I did like six years of ballet.

What would be your worse PE lesson?
P4: um...X-country for ages and ages and ages

So would it be any lesson that would make you work really really hard?
P1: Well not really hard but I think just a mixed lesson where its just like gymnastics and x-country or something like that cause um I think that working a bit hard.
Appendix X

Study 3b Interview Questions 2 – Tracking year 7

1) Describe your experience of PE in secondary school so far this year?

2) What are the differences between PE in secondary school compared to primary school?

3) What are your thoughts towards the types of activities you do in secondary school compared to primary school?

4) Why do you think you do the activities you mentioned in school? Would you prefer to do other activities, why?

5) Does the type of activity change how you feel about PE before, during and after the lesson? Can you explain and give an example.

6) Describe to me how you feel before and after a PE lesson?

7) Is there anything about PE that makes you feel uncomfortable e.g. anxious, nervous etc. explain why?

8) Describe your feelings towards your PE teacher. Is there anything she could do differently in the lesson?

9) How does your PE teacher in secondary school differ from your PE teacher in primary school? Why do you think this is?

10) Do you feel you have improved/ made progress in PE so far this year? How do you know?

11) How do the other students in your PE class make you feel in the lesson?

12) Do you like competing against your peers? Why/why not?

13) Do the students in your PE class effect your performance/effort/feelings etc...?

14) What would be your perfect PE lesson in school and why?
1) Describe your experience of PE in secondary school so far this year?
A: “I like dancing way more than swimming, well I don’t like it more but I think,
A: Yeah I've enjoyed dance a lot more than swimming because...I don’t know
why its just
D: “It's because I don’t have to get my hair wet. It really annoys me because it
take like forever to dry.”
Is that the only reason why perhaps you don't enjoy it?
D: "No also because I find dance like easier
A: “Yeah, its easier to...cause in the pool you can't...the teachers' always trying to
help you try, you know...swim but cause they can't get...well, like get in and
show you, its quite hard, you know they're doing..so
A: “In dance they can sort of help you”
B: “Um...I think its good but we've just finished dance at the moment and
because I do dance its kind of a really low standard for me so its annoying
cause I haven't really learnt anything, but with swimming and gymnastics, it
must be annoying for the people good at gymnastics but um...I think that's been
really helpful for me.
How have you found games this year in year 7?
D: “Um I prefer netball...a lot, because I've never really liked hockey, yeah it
hurts my back and you need so much stuff like the hockey stick. Mine is too
small so I have to get a new one, then I've got to find the time to get one, and
then with like netball its like..PE kit, done instead of like shin pads, mouth
guards, hockey stick.
A: “And you also need a whole new...its like a new sort of kit really because you
have to get the astro shoes and things like that.
2) What are the differences between PE and games in secondary school
compared to primary school?
A: “Um well in PE we would very much stick to one thing for the whole of the
year. We didn't really have a different sort of...cause we had swimming all year
round and um...games would sort of be rounders in the summer and netball
and then hockey but we did swimming all year round, we didn't really have
different...um
Ok so whereas now you do lots of different activities?
D: Yeah
Do you prefer doing lots of different activities?
D: I prefer doing like lots of different activities but then it changes and your like
cant remember what it is now and also its quite annoying because I love
swimming but you only get to do it for one term.
B: Well in primary school they used to do like...everyone used to do hockey and
everyone used to do netball so everyone had a good chance of getting into the
team. Now they split it between half and half obviously but its kind of annoying
because if your in the hockey set, wait.....if you do netball whilst the others are
doing hockey, you kind of have less chance of becoming in the team.
Why is that...is because you are not being seen?
B: Yeah I think its cause your not being seen and they are kind of focusing on who would be right for the teams because my mum complained, I got moved, and um...but now they're just focusing in the A team were just playing netball and I feel like I'm just not being pushed, and I want to be pushed.
Right so you feel like you have almost been divided before you have even had a chance of proving yourself.
D: “Or the people who do netball in September they are in...they're in hockey season but they cant do hockey obviously...and then when they come into hockey then its netball season and sometimes you cant always get to practices so we don't get into the teams because we are in different seasons”
Are you given a choice then of whether you do netball or hockey?
Altogether – “No”
Are you just put into those groups?
B: They give you um.. like a taster, well not a taster but they do one hockey session and then they have different sort of activities to do, you show what you can do obviously, and then for netball they do the same thing and then they say right these will be good for this team and these for this team and I did awfully in the hockey one.. I kept on tripping over everything and I went home and I was like “mum, I don't think I'm going to be in the team, and then I got divided from all my friends and I just got really upset..”
It was almost like you had one chance...
B: “ yeah exactly, I don’t think it was very fair to be honest”
4) Would you prefer to do other activities, why?
A: “ I think we should get badminton back well because we did it at junior school, and rounders because um... I know people are probably going to disagree but I really hate cross-country, yeah and to be honest there is not really a reason to do it, its just school tradition um... but whereas badminton, you can sort of...I think they should do a club on badminton after school maybe and then if everyone liked it we could do it as a proper sort of school activity”.
So what do you like about badminton more than cross-country?
A: “Its just the whole thought of just running
D: “At primary school we had to run round the pitch like 5 times just for a warm up and that was just like...”
Why do you think teachers make you do cross country?
D: “because then we are not like pulling muscles... Cause then we are not getting really fat... but if we did like lacrosse or something it stll like running but it’s a bit more fun cause its still. Its like oooh a hill...run.
A: “I don’t think anyone is going to see a hill and go “oh great, I cant wait to get up there”
D: “They’re just going to go...I cant wait to get off there”
What is it about badminton then that makes you enjoy it?
A: “well its ...I mean im rubbish at tennis but I just enjoy doing it and I think because your...you get to know other people and you get to play with other people you know...because you have to play with another person otherwise yo don’t have a game. But cross-country..yeah cross-country its more of a sort of um competitive atmosphere. Its quite good having that but um...you know, you don’t really get to speak to people whilst you’re doing it because you know your out of breath and running, but um..
Do you feel very isolated when you’re running?
A: “yeah and you feel like you haven’t really got anyone there to support you, so if you fall over or something, people are just going to run passed..”
B: “…or laugh at you”

Do you feel your on show when your running?
B: “well I think its like when your running you go aah its just a gradual warm-up but…nobody wants to be the last one running, cause everyone is going to look at you and go, oh my god they are really slow, so everyone runs, becomes really out of puff and then physically cant take themselves any further. I knew this boy, when he was running he um.. he tripped over his laces and fell in mud and everyone just kind of like dodged him as they went passed, it was quite funny.

Have you had any experiences where you have been last and have any friends been horrible to you or have you seen friends or heard them talk about people coming last? Why would you be anxious about it?
D: “Cause its sort of like they’re talking about you like you didn’t come last and you didn’t come first so they’re just talking. Like last year..um Lizzie stayed behind with me because I pulled like all my leg muscle but I still had to do it and she stayed with me the whole time and like everyone else was like looking back on us and were just like “oh well, were still doing it”, also like Lizzie said its um…the competitive atmosphere and like people who are in different houses are like to their friends “oh yeah we are so going to win against you, your house like sucks” and everything
You don’t like that
D: ”No cause its like dividing friends in a way.
A: “yeah and sometimes they mean it in a sort of jokey way but they can actually be a bit mean to the other person that they’re saying it to.

How does it make you feel towards the teacher when you have to do cross-country?
B: “I give them this evil glare like, “what are you making me do this for” but then I kind of just get on with it and by the end I’m like jelly on the floor but I think…no I really don’t like it. I would rather run around the netball court…it looks. I think it’s the fact that it looks a longer distance but if I run around the netball court then it just looks like shorter and probably by the time I’ve run round Burleigh park I’ve like round the netball court like hundred times.
D: “..plus its hard running in grass and mud
B: “there are a lot of obstacles as well”
D: “theres like branches which spray out from the trees and then everyone trips over them which is not very nice.

5) Does the type of activity change how you feel about PE before, during and after the lesson? Can you explain and give an example.
All say “yes, yes”
A: “because, I know I keep coming back to badminton but when I play it at home I sort of think to myself at the start I think “oh I don’t really want to do this and then once I get into the game its really fun and I enjoy it, but some sort of games lessons you don’t really want to do it, its like um..hockey, I mean sometimes I think “oh I am going to really prove myself this lesson”, and I think I am going to be able to do really well and then I think, I sort of get half way through and I realize I am not doing that great so I just give up and think, “oh well if im not doing brilliant, I’m not going to bother..”
So how do you know whether you are doing brilliantly or not?
A: “well cause i don't know, its just but.”
What are you comparing your ability to?
A: “Mostly other people um...cause ive never been in any sort of teams or anything because I'm not that sporty and I'm not that sport but I just enjoy the game but then I sort of find myself comparing myself to the other people and thinking, well they're good at it why aren't I, you know and its always sort of hard.
So do you feel like you are not progressing and then you are not wanting to bother or give up.
A: “yeah”
Can the teacher do anything to help that?
A: “well I don't really know cause its sort of a mental thing really, you can't say to them cause its, you know if you go up to them and say “oh you know im comparing myself to so and so, I don't feel great, I don't want to do this anymore”, they'll just say, well they won't say anything really, so id never say that to them, because it's a bit awkward to say that”
But even if the teacher is encouraging you when your doing well would that have an affect or would you still know you are not as good as other people?
A: “It wouldn't really I would still think I wasn't great but...”
B: “well, today I actually said I'm really not looking forward to games today just because there’s like this A team, I’m in the D team for netball and all the teachers always phone to say they get the A team so they get the proper practice and theirs us kind of like not...cause there is only like three or four C/D matches in a year so there probably going to be like "oh it doesn’t matter, they've got a match next week and they'll focus on them..and its great if your in the A team cause then you get fun and they were doing it to music and stuff and there’s us in the background just looking at them.”
Would you like it to be more competitive then even in the D team?
B: “yeah I would, I want to be pushed, I want to have that feeling of “oh yeah...” cause we play these games cause there’s not 14 of us in a group, you have to play 5v5 and sometimes I just feel like when it goes off the court, “oh for gods sake, not again” and it kind of then, when you watch the A team play it looks so much more fun because they’re taking it a lot more competitively and they play more game practices than we do and it just makes me feel a bit...”
Do you feel that they are improving more because they are practicing more?
B: ” yeah exactly and its always the same people, because they were the A team for the hockey, now they’re the A team for the netball, and they’ll probably be the A team for the athletics and were just like the cast offs”
How would you change that then?
B: “yeah I think I’m just like...people get jealous like I get jealous, like my friends who always is in matches, going away and then there’s just like and its really annoying, like having a friend like that who’s just amazing at sport like...”
Do you think then that children should not be able to do all sports?
B: “No I'm not saying that, I think its just like, they expect you to turn up to practices and I cant turn up to every practice so I’m not judging people that do cause they’re not busy they’ve got an advantage um but also I think its just like...I cant really compare myself to someone who does every single sport and
I don't do that many, so I think it's just jealousy really, just wanting to be the best.

D: "I think we should be able to like choose what sports we do, cause if it's like hockey, it's like I'm never going to use hockey but like netball, netball is useful for basketball and like if there was lacrosse you be like "yeah I want to do lacrosse instead of hockey"

B: "they do loads of different varieties of clubs but not actually taking them seriously"

D: 'yeah like lacrosse is a club but it's like all lunchtimes, like Friday, but I can't always make it because I like either have something on..."

So you'd rather it be in lessons to learn...

D: "yeah"

6) Is there anything about PE and games that makes you feel uncomfortable e.g. anxious, nervous etc. explain why?

A: "I think that sometimes, it's like in gym, gymnastics...I because, I um...we have to wear white skins and we I don't like them, they make it see through and um...I wrote a letter to Miss X and saying you know "I think we should change it or at least get another piece of clothing that is still tight but not as you know...a different colour so I think sometimes the um.. the sort of kit you have to wear can be really, it can sort of make you feel very uncomfortable and plus you have to wear these weird little cycling short things..

B: "they make you really chubby around the legs.."

D: "yeah like in gymnastics I'm just like 'mmmm, trying to hide myself"

So you feel self-conscious?

All say "yeah"

D: "I'm just like shy anyway but in gymnastics I'm like..."no, cause it's just like"

B: "I don't really know I think in swimming, they'd be like "dive off the thing" and if you can't dive you'd feel really uncomfortable, like what if I hit my head or whatever, but then they do give you the option like you can pencil jump, slide in...but um I don't think anything really makes you feel that uncomfortable...I know that when um.. we play netball and my teachers sort of like looking at her phone or looking the other way and I'm kind of playing my best I'm like "what, why aren't you watching me" and then when I'm playing really awfully she's then looking and its like "this is fate isn't it"

8) Describe your feelings towards your PE teacher. Is there anything she could do differently in the lesson? How does she differ from your PE teacher in primary school?

B: "Well my teacher...is this PE or games?

Both

B: "Oh well my PE teacher she's really nice, I really like her, but my games teacher she can sometimes get a bit sidetracked. When ever I look over at her she is like always on her phone texting like phoning somebody and I'm kind of thinking like maybe she's let us do this because its not important but that's kind of a bit too often. My old primary school teacher she was um... she was never on her phone, she was always concentrating, she was always setting us new tasks to do, which made it a bit more exciting and more exercising. Because if she is not looking then you just stand there like, "I don't have to do this, do I?"

It doesn't make you want to work hard
B: “No”

D: “Um, I think this happens once or twice but like my games teacher gets out her phone, she looks at it, she looks up, she looks down again, she does something and then she puts it back in her pocket, but then like the junior school would be no if someone calls or would turn it off and then like if it was really important she would go “no do this”, she would watch us and still be on the phone.”

Do you not feel she is involved in the lesson?
Well she is but then she isn’t at the same time

A: “I don’t know I mean um... the teachers here they aren’t, they’re really nice but sometimes they arnt really um...you know as .....said earlier they sort of focus too much on the best team or something like that and that’s great cause you know they’ve got to be pushed as a team but they’ve got to include all of us and um... yeah..um cause its not all you know black and white, your in the middle and your all together.

In the lesson then what would you like the teacher to do more of?
A: “I think most likely um, probably like, they could still look at us as if were in the team but we’re not, well I’m not anyway, but you know but look at us as all individuals, not just as a whole collective group, you know sort of try, I think more feedback would be really good as well, cause in dance I am not very good and Id like to get better but they don’t really ever say...they film it and then give it to you and say “watch this” and see what you could improve but its not from another persons point of view its sort of just your own...yeah”

11) How do the other students in your PE class make you feel in the lesson?
B: “Well today we started this whole big tournament thing cause nearly the end of the spring term and so we all mixed up, like completely random, there were people from the A with the D and it was really good and I would love to do more of that, because its mixed abilities and stuff but say if your shooter and you miss a goal your hidden behind going like “oh no, gods sake” and it makes you kind of feel a bit down and you want to kind of swop positions because you daren’t miss again, then they’ll look...I know cause this has happened before that um... they’ll be like “oh my god there was this girl in my team who was absolutely awful, she made us lose, this whole thing was ruined because of her” and I just feel kind of sorry for those people who are horrible to you because you just feel really down and doubting yourself, thinking should I even be doing this

Are these people that are horrible are then generally the good players?
B: “Sometimes they are, other times they think they are but most of the time..yeah”

C: “Well in PE there is some girls and they are really distracting and they are just in the corner like giggling or like being excluded and whispering and they’re just like being like...whispering then looking at someone, making it obvious that they’re looking at them, and then turning to someone else and its just like, and then when they look at you you’re just like “are you talking about me” and they’re like “no, no, no” but then your like its pretty obvious you are”

So it makes you feel uncomfortable
C: “Yeah because you’re like why are you talking about me”
Appendix Z

5th September 2012

Dear Headmistress,

I am a current PhD student at Loughborough University and I am hoping to undertake a research project in the area of Motivation in Physical Education at the school. Specifically, I am hoping to investigate reasons why some pupils may lack motivation in PE and subsequently are disengaged in lessons.

Therefore, I am writing to ask if you would give permission for the girls in UIII (year 7) to be asked if they would consider participating in my study. This would involve them completing a questionnaire at the end of every unit of work in their PE lessons for the whole year. The questionnaire will take between 20 and 30 minutes to complete and has been carefully designed to ensure that it is suitable for the age-group targeted. The study is subject to ethical approval by Loughborough University and only when approval has been given and parental consent has been obtained will the data be collected.

Please contact me or my project supervisor, Dr. Christopher Spray, (contact details are provided below) to let me know of your decision and if you have any queries about the research.

Many thanks

Yours sincerely,

Rachel Jackson

R.Jackson@lboro.ac.uk 07919 098162

Contact details for Dr. Christopher Spray:

Telephone: 01509 226339
Email: C.M.Spray@lboro.ac.uk
Dear Parent/Carer

I am a PhD research student at Loughborough University and currently a Teacher of Physical Education and Psychology here at …………………school. I am conducting research into understanding children's motivation in physical education. The Headmistress has kindly agreed to allow me to conduct my research within the physical education department at the school. However, in line with Loughborough University procedures that safeguard good practice, I am also required to ask for your permission for your child to participate in my research. The purpose of the research is to understand more about children's thoughts and feelings in relation to physical education lessons. The research will involve the completion of a short questionnaire at the end of every unit of work throughout the school year. All information collected is confidential and no individual will be identifiable by name in any publication arising from the research.

Please complete the section below and return this letter by 27th September to Mrs Kersey in the PE department, or email ………………………if you DO NOT give permission for your daughter to participate in the research. Please contact myself, or my project supervisor, Dr. Christopher Spray, (contact details are provided below) if you have any queries.

Yours faithfully

Mrs R Jackson-Kersey
Teacher of Physical Education
Teacher i/c Psychology

Contact details for Dr. Christopher Spray:
Telephone: 01509 226339
Email: C.M.Spray@lboro.ac.uk
Address: Loughborough University, School of Sport, Exercise and Health Sciences, Leicestershire, UK, LE11 3TU.

I **DO NOT** give permission for ______________________________ Form Group____ to take part in the research being conducted at ………………………………………..

Signed_________________________ (Parent/carer)
(Parent/Carer)
Appendix BB

Research Project to Explore Motivation in School Physical Education

Participant Information Sheet for Teachers

Main investigator: Dr. Christopher Spray, School of Sport, Exercise and Health Sciences, Loughborough University. Tel: 01509 226339, email C.M.Spray@lboro.ac.uk.
Research student: Rachel Jackson, School of Sport, Exercise and Health Sciences, Loughborough University, email R.Jackson@lboro.ac.uk.

What is the purpose of the study?

The purpose of this study is to examine motivation among students across different activities in physical education during their first year of secondary school.

Who is doing this research?

Rachel Jackson (a current PhD student at Loughborough University and full-time teacher of Physical Education) will be conducting the research. Her project supervisor is Dr. Christopher Spray, senior lecturer in the School of Sport, Exercise and Health Sciences.

Once I take part, can students change their mind?

Yes. After they have read the information and asked any questions, they will be asked to complete an informed consent form. However, if at any time before, during or after the sessions they wish to withdraw from the study, please contact the main investigator. Students can withdraw at any time, for any reason and they will not be asked to explain their reasons for withdrawing.

How long will it take?

It should take about 20 minutes to complete the questionnaire in the last PE lesson of the unit of work.

Is there anything I need to bring with me?
What will I be asked to do?

As the teacher of the PE lesson, you will be required to hand out the questionnaires to each student and explain the purpose of the study. Please make sure the students remain in silence and do not discuss their responses with each other. You will also be asked to grade each student based on their achievement and effort using the schools’ grading system and the criteria sheet for the specific activity taught in each unit of work. Before handing this information to the research student, please make sure the names of students are removed and only the date of birth and the attainment/effort grades of each student are passed on.

Will students taking part in this study be kept confidential?

All questionnaires will remain anonymous and will be confidential. Only the research student and supervisor will have access to the data. The data will be stored safely in accordance with the Data Protection Act 1998.

What will happen to the results of the study?

The results of the study will be compiled and analysed using quantitative analysis and used to draw conclusions as part of the research project.

I have some more questions who should I contact?

Rachel Jackson (PhD research student) or Dr. Christopher Spray can assist you with any enquiries or concerns. Their contact details are at the top of this information sheet.

What if I am not happy with how the research was conducted?

Please contact the project supervisor with any concerns. You may also visit Loughborough University's web page concerning academic misconduct for more information. The link is: http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm.
Appendix CC

Research Project to Explore Motivation in School Physical Education

Participant Information Sheet for Participants

Main investigator: Dr. Christopher Spray, School of Sport, Exercise and Health Sciences, Loughborough University. Tel: 01509 226339, email C.M.Spray@lboro.ac.uk.
Research student: Rachel Jackson, School of Sport, Exercise and Health Sciences, Loughborough University, email R.Jackson@lboro.ac.uk.

What is the purpose of the study?

The purpose of this study is to examine motivation among students across different activities in physical education.

Who is doing this research?

Rachel Jackson (a current PhD student at Loughborough University and full-time teacher of Physical Education) will be conducting the research. Her project supervisor is Dr. Christopher Spray, senior lecturer in the School of Sport, Exercise and Health Sciences.

Once I take part, can I change my mind?

Yes. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

How long will it take?

It should take about 20 minutes to complete the questionnaire

Is there anything I need to bring with me?

No

What will I be asked to do?

To complete the questionnaire on your own and in silence.
**Will my taking part in this study be kept private?**

You do not have to put your name on the questionnaire and your responses will not be seen by any teacher in the school apart from the research student. Only the research student and supervisor will have access to your responses. Your teacher will also be passing on to the research student your attainment and effort grades for the purpose of the research, however this will remain anonymous at all times.

**What will happen to the results of the study?**

The results of the study will be analysed and used to draw conclusions as part of the research project.

**I have some more questions who should I contact?**

Rachel Jackson (PhD research student) or Dr. Christopher Spray can assist you with any enquiries or concerns. Their contact details are at the top of this information sheet.

**What if I am not happy with how the research was conducted?**

Please contact the project supervisor with any concerns. You may also visit Loughborough University's web page concerning academic misconduct for more information. The link is: [http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm](http://www.lboro.ac.uk/admin/committees/ethical/Whistleblowing(2).htm).
Appendix DD

Willingness to Participate Form

A study of pupils’ motivation in physical education

I am a teacher in Physical Education who is currently doing research at Loughborough University. I am interested in learning more about pupils’ motivation in PE. To gather this information, I have put together a questionnaire that contains a number of sections. The questionnaire will take 20 to 30 minutes to complete.

You do not have to fill out the questionnaire and no one will mind if you do not want to do the study. All your answers will be confidential and will not be seen by any of your teachers. If you would like to take part in this research, please read the information below and sign your name in the space provided.

3. The purpose of this study has been explained to me.

20. I have read and understood the information above and this form.

21. I have been able to ask questions.

22. I understand that I do not have to take part in this study.

23. I understand that I have the right to drop out from this study at any stage for any reason, and that I will not be required to explain my reasons.

24. I understand that all the information I provide will be treated in strict confidence.

25. I agree to take part in this study.

Your name

Your Signature

Signature of Investigator

Date
Appendix EE

PHYSICAL EDUCATION QUESTIONNAIRE

Gymnastics

2013/14
SECTION A

Please complete the following questions.

1. **School:**......................................................................................

2. **Year Group:**..................................................................................

3. **Gender (please tick):**
   - Male
   - Female

4. **What is your date of birth?**
   
   e. Write the date you were born on the dotted line below (e.g. 1\textsuperscript{st}, 14\textsuperscript{th}, 23\textsuperscript{rd}).

   f. Please tick below the month that you were born.

   January
   February
   March
   April
   May
   June
   July
   August
   September
   October
   November
   December

5. What year were you born? (e.g. 1995, 1997, 1999)
SECTION B

- Please answer each question below.
- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th>1a. How often do you experience a lack of motivation to do gymnastics lessons?</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1b. I have no good reason to do gymnastics.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2.</td>
<td>Gymnastics is not valuable to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Gymnastics holds no interest.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Gymnastics is not important to me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I don’t have what it takes to do well in gymnastics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I don’t have the knowledge required to succeed in gymnastics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I’m not good at gymnastics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>The tasks demanded of me in gymnastics are beyond my abilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9. I find that gymnastics is boring. 1 2 3 4 5 6 7

10. I don’t like gymnastics. 1 2 3 4 5 6 7

11. I have the impression that it is always the same activities in gymnastics every year. 1 2 3 4 5 6 7

12. My gymnastics lessons are not stimulating. 1 2 3 4 5 6 7

13. I’m a bit lazy in gymnastics. 1 2 3 4 5 6 7

14. I’m not energetic enough in gymnastics. 1 2 3 4 5 6 7

15. I can’t seem to put the effort in that is required in the gymnastics lesson. 1 2 3 4 5 6 7
16. I don’t have the energy to do gymnastics.

SECTION C

- Based on the unit of work you have just completed in gymnastics please answer each question below.
- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>We feel the PE teacher provides us with choices and options.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>The PE teacher has respect for us.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>The PE teacher helps us to improve.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
4. The PE teacher listens to how we would like to do things.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

5. The PE teacher supports us.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

6. The PE teacher makes us feel like we are good at gymnastics.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

7. The PE teacher encourages us to ask questions.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

8. The PE teacher is interested in us.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

9. We feel that the PE teacher likes us to do well.

<p>| 1 | 2 | 3 | 4 | 5 | 6 | 7 |</p>
<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>We feel able to share our feelings with the PE teacher.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>We feel the PE teacher is friendly towards us.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>The PE teacher makes us feel like we are able to do the activities in class.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION D

- Please answer each question below.
- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th></th>
<th>Not at all true</th>
<th>Very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am satisfied with the kind of person I am physically.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>2. I feel good about the way I look and what I can do with my body.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>3. Physically, I am happy with myself.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>4. I feel good about what I can do physically.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>5. Physically I feel good about myself.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>6. I feel good about who I am physically.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>
SECTION E

- There are no right or wrong answers.
- Circle one number for each question which best represents your opinions.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

In this gymnastics class, most pupils…….

1. …help each other improve at activities and skills in gymnastics.  
   1  2  3  4  5  6  7

2. …work together to improve the skills which they do not do very well.  
   1  2  3  4  5  6  7
3. …work with their classmates to develop new skills.

4. …teach their classmates new skills

5. …make their classmates feel valued.

6. …make their classmates feel they are part of a group.
<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>…listen to everyone’s thoughts and ideas.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>…say positive things about their classmates who try hard.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>…like their classmates to try hard during lessons.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>…want their classmates to try their hardest.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>…set an example by always giving 100% effort during lessons.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>…want their classmates to keep trying after they have made a mistake.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>…want each other to perform better than other pupils in the class.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>…listen to the thoughts and ideas of the more able pupils in the class rather than those of the less able pupils.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>…want to do better than their classmates.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>16.</td>
<td>...like to perform better than their classmates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>...want to work in the same group as the best pupils in the class.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>...make negative comments when their classmates are not very good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>...say negative things about their classmates when their classmates make mistakes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix EE

...laugh at their classmates when they make mistakes.

Teacher Effort Rating Scale

<table>
<thead>
<tr>
<th>Surname</th>
<th>Name</th>
<th>House</th>
<th>Grow at least on difficult or challenging tasks</th>
<th>Often made the effort to learn how to perform tasks</th>
<th>Performed very well to near difficult tasks</th>
<th>Not discouraged even after failure</th>
<th>D/O/B</th>
<th>GYMNASTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
<td>1 = Strongly disagree</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
<td>5 = Strongly agree</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix GG

Attainment Criteria

GRADE 5

- You can dance with some rhythm and control and show some awareness of style and music.
- You can link basic movements and ideas into your dances and describe simple performance skills.
- You can develop your dances and skills with guidance.
- You can recognise the need to warm up for dance.

GRADE 4

- You can remember, refine and repeat short dances with a growing sense of style and artistic intention.
- You can develop and adapt dance material and show awareness of musical structure rhythm and mood.
- You can use specific terminology to describe your own and others’ performance.
- You can prepare and recover form your dances using safe and appropriate exercises.

GRADE 3

- You perform using a good range of skills and techniques clearly with expression.
- You can develop dance ideas and motifs to make longer dances using basic compositional ideas.
- You can identify strengths and weaknesses in you own and others work and suggest ways to improve.
• You can recognise the need to develop strength and suppleness to improve performance and carry out exercises to do this.

GRADE 2

• You perform with expression, fluency and accuracy.
• You combine a range of ideas into your dances and can develop dance ideas and motifs with a clear view of what you wish to communicate.
• You can take the lead in a group situation and are careful to involve others.
• You can describe how other forms of exercise can help to improve your dance performance.

GRADE 1

• You demonstrate excellent technical and expressive skills when performing in a range of dance styles.
• You can work on your own and others to develop rehearse and present dances.
• You can effectively take the lead as a choreographer, evaluating and adapting dances to achieve aesthetic appeal.
• You take the initiative and lead groups in designing, carrying out, monitoring and adapting preparation programmes leading to a dance performance.
• You can plan and carry out dance specific warm up / cool down activities.
GRADE 5

- You can perform basic skills on the floor and on apparatus i.e. forward roll / log roll and simple balances but your technique is not always correct.
- You can put basic skills such as rolls and balances into order within a basic sequence with a start and finish position.
- You can make basic judgements about the quality of your own and others work.
- With guidance, you can identify exercises that improve suppleness and strength.

GRADE 4

- You can perform some basic agility / vaults on the floor and on apparatus i.e. forward roll / log roll / simple balances with reasonable technique.
- You can link a sequence effectively using some of your own ideas.
- You can use specific terminology to describe your own and others’ performance.
- You can identify and work on strength and suppleness needed to perform with greater quality.

GRADE 3

- You can demonstrate some basic agilities / vaults on the floor and on apparatus mostly with good technique.
- You can perform a flowing sequence that includes many of your own ideas.
- You can analyse your own and others work picking out some important areas to improve.
- You can perform a good gymnastics specific warm up and cool down routine that has some of your own ideas.
GRADE 2

- You can perform a range of basic agilities and some basic vaults with good technique and control.
- You can design and perform a fluent sequence that challenges your own ability and takes into account the ability of others involved.
- You can take the lead in a group sequence situation and are careful to involve others.
- You can describe how other forms of exercise can help to improve your gymnastics performance.

GRADE 1

- You can attempt all the basic agilities / vaults with good control and you may be able to attempt one or two advanced agilities. More advanced vaults may need some degree of assistance.
- Your sequences show a polished performance and include a full range of basic moves and some advanced skills performed with style and control.
- You have clear idea about how to develop, progress and improve your own and others’ work.
- You can design and carry out a safe and gymnastics specific warm up and cool down programme.
GRADE 5

- You can attempt shoulder, chest and bounce passes but with little accuracy, power and consistency.
- Your knowledge of the rules of the game is limited and there is little evidence of correct footwork in competitive situations.
- You carry out practices and ideas given to you by others to help improve your play.
- You can give reasons why warm up is important before playing netball.

GRADE 4

- Your passing and catching skills show some improvement in accuracy and consistency and your footwork is generally good in a game.
- You can apply simple dodging tactics in a game and select the appropriate pass for the situation.
- You can recognise what is good netball performance and use this to improve your own performance.
- You can describe what the effects of playing netball can have on your body.

GRADE 3

- You now show fluency and accuracy in your netball play.
- You have a basic understanding on attack and defensive principles and demonstrate knowledge of the rules and tactics.
- You can comment on the strengths and weaknesses of your own and other players’ game and can take on a variety of roles including the umpire, coach and scorer.
• You can identify the fitness needs of the different roles in the game.

GRADE 2

• You demonstrate skills with speed, accuracy and control and show a good standard of passing and catching in practice and in game situations.
• You read the game well and demonstrate effective marking techniques.
• You can take the lead in a team situation and are careful to involve others.
• You can describe how other forms of exercise can help improve your netball performance.

GRADE 1

• You demonstrate a very high level of quality in your passing and catching, your footwork is faultless and you show arrange of marking techniques.
• You can form game plans in a range of situations and games, making a significant contribution to team effectiveness in a variety of roles.
• You communicate well with other team members and offer support and advice on how to improve performance of the team / individuals.
• You can develop targets to improve your / your teams’ performance and fitness.
GRADE 5

- You can enter the pool safely and can float unaided for a short time.
- You have difficulty sculling on my back and struggle with the correct technique for the towing rescues.

GRADE 4

- You can enter the water safely and float unaided.
- You know how to assess dangers in the water.
- You can scull on my back across the width of the pool. I can help a casualty within reaching and throwing distances from the side of the pool.
- You can recognise good technique in rescue situations.

GRADE 3

- You can enter the water safely and float unaided.
- You can use at least two different sculling actions.
- You can tread water out of my depth for at least two minutes.
- You can perform and explain the HELP position.
- You can perform a surface dive and reach the bottom of the pool in the deep end. I can also perform reach, throw, wade and towing rescues showing good technique.

GRADE 2

- You can enter the water safely in at least two different ways.
- You can use a number of different sculling actions.
• You can tread water out of my depth for at least five minutes and can perform and explain the H.E.L.P position.
• You can perform headfirst and feet first surface dives and reach the bottom of the pool in the deep end.
• You can confidently and efficiently perform reach, throw, wade and towing rescues.

GRADE 1

• You can fulfil all the criteria for grade 2 without getting tired.
• You can help less able pupils to develop their skills.
• Your technique is efficient and consistent.