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National Longitudinal Study of Children

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INFLUENCES ON 9-YEAR-OLDS' LEARNING: HOME, SCHOOL AND COMMUNITY

CHILD COHORT

REPORT 3

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Selina McCoy, Amanda Quail, Emer Smyth

Name	Title	Institution
Selina McCoy	Senior Research Officer	ESRI
Amanda Quail	Research Fellow	ESRI
Emer Smyth	Research Professor	ESRI

ESRI

TRINITY COLLEGE DUBLIN

An Roinn Leanaí agus Gnóthaí Óige
Department of Children and Youth Affairs

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EXECUTIVE SUMMARY

This report looks at children's out-of-school activities and how these relate to the domains of family, school and neighbourhood. The report provides new information on the types of recreational activities engaged in by nine-year-old children and explores the relationship between their out-of-school lives and their academic performance at school.

The *Growing Up in Ireland* study collected rich information on the kinds and frequency of activities engaged in by children. The analysis presented in this report takes into account a range of different activities, including structured activities (sports and cultural clubs/classes), active recreation (sports and exercise), sedentary pursuits (including watching television and playing video games), the use of ICT for different purposes, spending time with friends, and helping out with chores at home. Cluster analysis was used to look at the combinations of activities in which children engage. Five distinct clusters emerged:

1. The *TV/sports group*, who spend their time playing sports, being with their friends and watching television; they have a very low level of computer usage.

2. The *social networker group*, who have a high and diverse use of ICT, being the only group to use it for social networking; they spend a lot of time with their friends, and also spend time reading and taking part in cultural activities.

3. The *sports/computer games group*, who spend more time on sports and computer games than other groups, spend less time reading and have no involvement in cultural activities.

4. The *cultural activities group*, who combine solitary and organised cultural activities in the form of reading for pleasure and after-school lessons/groups.

5. The *busy lives group*, who are characterised by the diversity of their activities, spending some time on ICT, reading, cultural activities, sports and video games.

There are clear gender and social background differences in children's recreational activities. Girls are more likely to be social networkers or spend time on cultural pursuits while boys are more likely to engage in sports/computer games. Children from more advantaged families (in terms of parental education, social class, and income) are more involved in cultural activities and social networking outside school. Children from immigrant families are more likely to fall into the social networker or busy lives groups and less likely to engage in cultural activities. Children with learning disabilities are most likely to fit into the TV/sports group and, to some extent, the busy lives group; having a physical disability or chronic illness does not appear to affect out-of-school activities.

Clear differences are evident between urban and rural children in their out-of-school activities. Urban children are more likely to fall into the social networker and busy lives groups. Neighbourhood factors are associated with children's recreational activities; those in the cultural activities group are more likely to live in orderly areas with green spaces. There is tentative evidence, however, that engagement in structured or solitary cultural pursuits is associated with living in an area where it is seen as less safe to play outside. Social networkers, who spend a good deal of time with their friends, are more likely to live in an area where it is safe to play outside, and there are green spaces and safe parks to play in.

Children's school experience is found to be associated with what they do outside school. Children attending gaelscoileanna have a distinctive profile, being least likely to fit into the TV/sports group and being strongly engaged in cultural activities. Having Internet access in school is associated with greater use of ICT outside school, especially for social networking.

Clear differences are evident in reading and mathematics performance according to the types of out-of-school activities in which children engage. Even taking account of a wide range of background factors, children who engage in cultural activities and social networking perform better in reading and mathematics than other groups. Those taking part in sports/computer games also have higher reading and mathematics scores. Thus, the lowest test scores are found among those who spend their time on TV/sports and among those with 'busy lives'.

Analysis of one wave of data requires caution about the causality involved. However, it is a matter of policy concern that children from less advantaged backgrounds are less likely to engage in the kinds of out-of-school activities which appear to enhance academic performance. In the longer term, children's recreation patterns may serve to widen the social class gap in achievement.

Chapter 1

INTRODUCTION AND CONTEXT
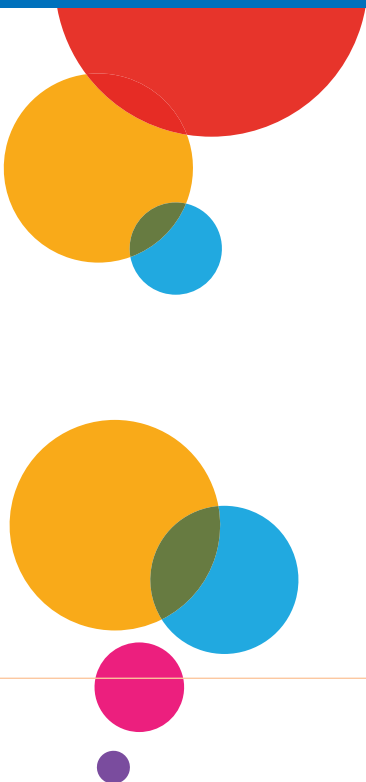
1.1   INTRODUCTION

This report uses *Growing Up in Ireland* data on over 8,500 nine-year-olds to explore the factors influencing children's learning. Children's learning occurs across a range of settings, both formal and informal. There has been a long-standing debate on the relative influence of school and other factors on children's outcomes. Studies estimate that between 75% and 90% of the variation in cognitive scores is attributable to family and other non-school influences (Teddlie and Reynolds, 2000). There is now a large body of research on the way in which home circumstances and approaches to parenting shape children's cognitive development (see, for example, Kiernan and Huerta, 2008), and analysis of the *Growing Up in Ireland* data adds to our knowledge of how parenting styles influence socio-emotional outcomes (see Nixon, 2012). There is evidence too that middle-class children tend to engage in the kinds of structured out-of-school activities which facilitate their learning (Lareau, 2003). However, there has been little attention to the potential influence of more general out-of-school activities and the way in which such opportunities for informal learning interact with formal learning at school. In this study, we explore the interaction between formal and informal learning for nine-year-old children, taking a holistic perspective which takes account of the different domains of children's lives, including home, school and neighbourhood.

Previous work on the nature and impact of out-of-school informal learning has generally assessed activities on a one-by-one basis; for example, by looking at time spent watching television or involvement in structured groups or lessons (an exception is work by Bartko and Eccles, 2003, who look at clusters of adolescent out-of-school activities). In this study, we attempt to take a broader perspective by looking at the clusters of activities engaged in, and the frequency of such activities, among nine-year-olds in Ireland, exploring how they combine different sets of activities, and whether there is any trade-off between these activities.

The analysis will therefore contribute to the understanding of how the different contexts within which children operate influence their outcomes. The analysis has implications for policy development, since it will help to identify whether all children have access to the kinds of out-of-school learning opportunities which would support their formal learning, regardless of the family they come from, the school they attend and the neighbourhood in which they live. In the remainder of this chapter, we set the scene by discussing existing research on socio-economic differences, neighbourhood factors and school influences in out-of-school activities.

1.2   RESEARCH ON OUT-OF-SCHOOL ACTIVITIES

1.2.1   SOCIAL AND GENDER DIFFERENCES IN OUT-OF-SCHOOL ACTIVITIES

The theme of social differentiation in educational attainment has held a prominent place in sociological research. Research studies consistently indicate that educational attainment reflects prior differences in social class background, parental education and/or income across different national contexts and time periods (see, for example, Shavit and Blossfeld, 1993). The nature and impact of children's out-of-school experiences and informal learning have received much less attention. Few studies directly assess the contribution of such out-of-school experiences to children's learning and educational development. However, insights can be gleaned from socio-cultural reproduction theory, exemplified by the work of Bourdieu (see, for example, Bourdieu, 1984; Bourdieu and Passeron, 1977). This perspective focuses on the unequal distribution of economic, social and cultural resources (or capital) across classes and their transmission from parents to children. Being familiar with the dominant culture is a form of 'cultural capital' and influences an individual's predispositions to learning, among other factors (see, for example, Reay, 2004). Middle-class parents thus possess the kinds of cultural and social capital which enable them to foster their children's educational success.

Bourdieu's work does not always explicitly specify the relative importance of different aspects of social and cultural capital, whether the main influence is parental education (and therefore parents' familiarity with the schooling system), the language and interaction style within the home, or the kinds of cultural and social activities in which middle-class families engage. Empirical research drawing on Bourdieu's perspective has looked at 'cultural capital' as reflecting involvement in high-culture activities, such as arts-related leisure and visiting museums (DiMaggio, 1982; Robson, 2003). Young people's engagement in high-culture activities with their parents is found to facilitate their educational progress and to account for at least some of the social class gap in achievement.

Work by Lareau (2003) has built further on Bourdieu's theoretical framework by exploring the micro-level construction of social and cultural capital within the home and at school. Her focus is on out-of-school activities as 'concerted cultivation'; from this viewpoint, the enrichment activities (such as involvement in structured after-school activities, including drama, music, dance and sports) engaged in by middle-class children promote the dispositions and competencies that will help them succeed at school (see Vincent and Ball, 2007). In contrast, working-class parents generally have less involvement in their children's out-of-school activities. As a result, working-class children engage in more unstructured play with their peers and experience fewer constraints on their free time. For working-class children, then, there is a 'mismatch' between the cultures and structures of their lives inside and outside school, a mismatch which contributes to their educational disengagement and underperformance.

Children's involvement in structured activities outside school is found to enhance their educational performance at school (see, for example, Broh, 2002; McNeal, 1995; Marsh, 1992), a finding which we explore further below. However, concerns have also been raised about the potential impact of middle-class families' 'hyper-parenting' (Rosenfeld and Wise, 2000) on children's broader development. The 'hurried child' (Elkind, 2006), whose social life is as closely timetabled as their school life, can experience stress and exhaustion (Tofler, Knapp and Drell, 1999; Hays, 1996). They may also become less creative, unable to fill their own time, and find it difficult to interact with peers outside the confines of structured activities (Lareau, 2003).

Social class is not the only factor which shapes participation in out-of-school activities. Research in the United States indicated that parents' use of concerted cultivation was more pronounced among daughters than sons (Cheadle and Amato, 2010). Thus, girls tended to engage in structured activities more than boys (Fletcher *et al*, 2003) while boys tended to experience less parental supervision, being free to play 'outside' to a greater extent (Posner and Vandell, 1999). Gender differences are found too in the type of structured activities engaged in, with boys being more involved in organised sports and girls more involved in school clubs (Fredericks and Eccles, 2006). Using *Growing Up in Ireland* data, McCoy *et al* (2011) found that both social class and gender make a difference in the structure of children's daily lives. While they found a clear social gradient in the prevalence of practices associated with concerted cultivation, they also found that participation in structured and unstructured out-of-school activities had a different relationship to educational outcomes for boys and girls.

1.2.2 NEIGHBOURHOOD EFFECTS ON INFORMAL LEARNING

There has been much research examining whether the neighbourhood or area in which a child is living can affect the child's outcomes, independent of the child's individual characteristics. Leventhal and Brooks-Gunn (2000) summarise five theoretical frameworks for linking neighbourhood effects and individual behaviour. The first of these focuses on the role of the *availability of resources* in the neighbourhood, such as parks, libraries and community centres, which may provide stimulating learning and social environments. The second is a *collective socialisation* model of neighbourhoods dealing with the presence of adult role models, supervision and monitoring within the neighbourhood. The third, the *contagion* model, focuses on the flip side of this, and posits that problem and negative behaviours strongly influence, and spread to, others in the

neighbourhood. The fourth is a model of *competition*, which suggests that neighbours compete with each other for scarce community resources. The final model of *relative deprivation* suggests that individuals evaluate their own situation relative to that of their peers and neighbours.

Both independent neighbourhood factors, such as service availability and census measures of area deprivation, and parental perceptions of the neighbourhood characteristics, such as safety or social cohesion, can affect children's outcomes. Edwards and Bromfield (2009), using data from the Longitudinal Study of Australian Children, found that children living in more disadvantaged neighbourhoods had higher levels of conduct problems. Similarly, research conducted using data from the National Longitudinal Study of Canadian Children and Youth (NLSCY) showed that living in neighbourhoods which parents perceived as being safer, more cohesive and with fewer problems was related to fewer emotional or conduct disorders and less hyperactivity among children (Curtis *et al*, 2004). Catsambis and Beveridge (2001) found that children living in US neighbourhoods with concentrated disadvantage tended to have lower levels of mathematics achievement.

Neighbourhood factors have also been shown to have a specific impact on children's activity levels, such as physical activity and time spent with friends. Pabayo *et al* (2011) found that greater area deprivation was associated with lower levels of moderate-to-vigorous physical activity (MVPA) in 10-year-old boys, while higher levels of social cohesion, as reported by parents, was associated with higher levels of MVPA minutes for both boys and girls. A Canadian study by Davidson *et al* (2010) found that parental neighbourhood satisfaction and service provision, such as sidewalks and parks, had a positive influence on fifth-grade students' self-efficacy in relation to exercise (the confidence to be able to exercise), which in turn was positively related to the levels of physical activity in which the children engaged. Levels of physical activity in turn affected the children's weight status; children with less self-efficacy and physical activity were more likely to be overweight. Similarly, Oliver and Hayes (2008) used the NLSCY data to show that living in poor neighbourhoods was associated with increased body mass index (BMI) among children. Carver *et al* (2010) found that parental perception of the risk of their children being harmed in their neighbourhood was related to greater parental restrictions on children's engagement in outdoor activities, such as playing with friends outdoors, walking and cycling. The physical disorder of a neighbourhood can also have a negative impact on children's physical activity. Miles (2008) reported that parents of children living in neighbourhoods characterised by high levels of physical disorder (graffiti, litter, etc) were less likely to encourage their children's physical activity by using the local playgrounds.

Numerous other studies highlight this link between neighbourhood characteristics (social cohesion, physical disorder, perceived safety and service availability) and children's physical activity and outdoor play (Cradock *et al*, 2009; Weir *et al*, 2006; Gomez *et al*, 2004). There appears to be less research on what alternative activities these children are engaging in instead. One would assume that, if children are spending less time engaged in physical and outdoors activities, they are perhaps spending more time in solitary and sedentary activities. In this report, we will look at the whole range of activities in which children are involved and examine the effects of neighbourhood characteristics on such activities.

1.2.3 SCHOOLS AND OUT-OF-SCHOOL ACTIVITIES

In section 1.2.1, we outlined differences by social class in participation in structured activities outside school and the way in which these activities serve to reinforce the educational achievement gap. A range of different structured out-of-school activities are found to be associated with educational performance in school; these include organised sports, art or music classes, and school clubs (Broh, 2002; Fletcher *et al*, 2003; McNeal 1995; Marsh, 1992; Marsh and Kleitman, 2003; Phillips and Schafer, 1971). Research on the impact of unstructured sedentary activities, such as watching television or playing video games, on educational outcomes has yielded variable findings, with the effects depending on the nature, length and timing of exposure (see, for example, Kirkorian *et al*, 2008). Research has indicated not only a social gap in structured

activities outside school but a 'digital divide', with middle-class young people having greater access to the Internet and being more likely to use it for school-related purposes (see, for example, Notten *et al*, 2009). Halverson and Smith (2009) make a useful distinction between *technology for learning* and *technology for learners*. They argue that, while schools have increasingly made use of assessment and instructional technologies for learning, technologies for learners (e.g. social networking sites, video games, etc) are typically excluded from school contexts, with a resulting lack of connection between children's experience of ICT inside and outside school. Sefton-Green (2004) similarly argues the case for regarding online social networking and game-playing as a form of situated learning. Access to computers has been found to be positively associated with higher school test scores, even controlling for social background; in addition, the effect of computer use on school performance is found to be stronger for young people from higher socio-economic groups (Warschauer and Matuchniak, 2010).

Given the findings on the impact of out-of-school activities on children's educational performance, it is surprising that little or no attention has been given to whether schools can influence children's access to informal learning opportunities outside the school setting: "Little research investigates one of the key purposes of schooling – what students do with their learning outside of school" (Pugh and Bergin, 2005, p. 15). As a result of the failure to explore the links between formal and informal learning, research does not fully capture the "holistic ecology of learning" (Sefton-Green, 2004).

One of the most direct ways in which schools can influence children's out-of-school activities is by providing extracurricular programmes. These may involve drama, arts and crafts, organised sports, debating clubs and homework clubs. Research has indicated that such activities boost the achievement of students and also help to foster a more general sense of ownership over school life. In the Irish context, for example, schools with higher rates of student involvement in extracurricular activities were found to have higher exam performance and student retention rates, all else being equal (Smyth, 1999). However, relatively little is known about how extracurricular provision varies across different kinds of schools. An exception is the study by Power *et al* (2009) in the UK. They found that provision of extracurricular activities varied across schools; the number of activities was lower in rural schools and those serving more disadvantaged populations, and higher in independent and large schools.

Schools may also awaken children's interest in particular learning activities which they then pursue in their free time outside school. Thus, encountering art or music in school may prompt participation in such activities outside school. Again, there has been little research on this phenomenon, but the few existing studies highlight low levels of such 'school-prompted interest' among high-school students in the US (Bergin, 1992, 1996).

In this report, we seek to address a gap in existing education research by looking not only at whether participation in out-of-school activities influences educational performance but also whether the kind of schools children attend and the sorts of teaching they experience influence what they do outside school. The approach to the analysis of the *Growing Up in Ireland* data, the research questions addressed and the hypotheses we posit are discussed in the following chapter.

Chapter 2

METHODOLOGY
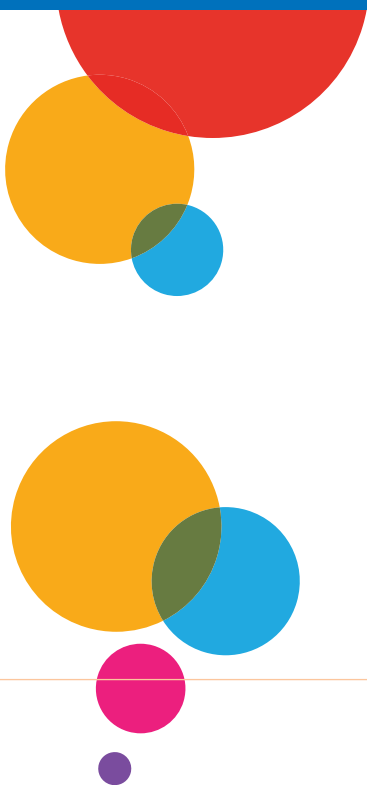
2.1   THE GROWING UP IN IRELAND STUDY

The *Growing Up in Ireland* study provides a unique opportunity to investigate the kinds and frequency of out-of-school activities engaged in by nine-year-old children and the relationship between these activities and their within-school learning. The *Growing Up in Ireland* project was commissioned by the Department of Health and Children through the Office of the Minister for Children, in association with the Department of Social Protection and the Central Statistics Office. The study is being carried out by a consortium of researchers led by the Economic and Social Research Institute (ESRI) and Trinity College Dublin (TCD). The study focuses on two cohorts of children: a nine-month-old cohort and a nine-year-old cohort. The analysis in this report is based on the data collected from the nine-year-old cohort.

The sample contains information in respect of 8,568 study children, their primary and secondary caregivers, their school principals and teachers. The sample was generated through the primary school system in 2007 and early 2008, when the children involved were nine years of age. A nationally representative sample of 1,105 schools was selected from the total of 3,326 primary schools in the Republic of Ireland at that time. Just over 82% of these (910 schools) were successfully recruited into the survey. The sample of children and their families were then randomly generated from within those schools. The response rate at the family level was 57%. The data used throughout the report are reweighted or statistically adjusted in line with the sample design to ensure that the information is representative of the population of nine-year-olds in Ireland.[1]

2.2   VARIABLES AND ANALYTICAL APPROACH

The analysis involved three main stages: an exploration of the clusters of activities in which nine-year-old children engaged; an examination of the relationship between family, neighbourhood and school factors and children's out-of-school activities; and an exploration of the association between out-of-school activities and children's academic achievement. In taking a holistic approach, we consider how aspects of children's school lives, out-of-school lives and neighbourhood characteristics shape their development and learning.

2.2.1   ANALYSING CHILDREN'S ACTIVITIES

The *Growing Up in Ireland* survey collected detailed information on children's out-of-school activities as reported by children themselves and by their primary care-givers, usually mothers.[2] The richness of the data allows us to explore not only the type of activities in which children engage but also the *frequency* with which they do so, yielding a more nuanced picture of their day-to-day lives. As indicated in Chapter 1, many studies of out-of-school activities focus on a single activity, which gives a less complete picture of children's recreation patterns and ignores potential trade-offs, for example, between physical activity and more sedentary pursuits. By moving beyond individual activities, this report considers how children (and indeed their parents) combine different sets of activities and how these combinations of activities influence children's access to formal and informal learning opportunities.

In order to explore the 'bundle' of children's activities, we use cluster analysis techniques. This involves dividing the sample of nine-year-olds into a small number of groups according to their similarity across domains of their out-of-school lives. The cluster analysis method identifies the underlying dimensions of variation among individuals over a large range of variables, in this case reflecting children's activities, and uses these dimensions to classify children into a small number of sub-groups according to similarities and differences across these variables. It is a well-established and widely used statistical procedure for both identifying and forming sub-groups of individuals across a range of variables used for classification, whether that be in botany or sociology (Hannan *et al*, 2003).

[1] The data were reweighted using a minimum information loss algorithm based on the fitting of column marginals to external totals. For a discussion of sample design, recruitment, response and reweighting of the data, see Murray *et al*, 2011.

[2] A copy of all questionnaires administered to the nine-year-old cohort in the school and home can be found at http://www.growingup.ie/index.php?id=62

In the Irish context, this approach has been successfully applied to examining the post-school transition patterns of school-leavers (Hannan *et al* 2003). Here cluster analysis yielded eight transition sub-groups of individuals with similar transition characteristics, including groups combining education and training with employment, a group with an insecure employment history, and a group combining short spells of employment and unemployment with a long period in household duties. The analysis proved an effective method for assessing the characteristics of individuals occupying the different transition pathways and the prevalence of these groups across school-leaver cohorts over the 1990s.

More recently, cluster analysis methods have been applied to a diverse range of educational, psychological and health topics internationally. This includes topics as diverse as stability and change in religiosity in Canada (Good *et al*, 2011), youth and adult physical activity patterns in China and the US (Monda and Popkin, 2005; Rovniak *et al*, 2010), standard-setting on educational tests in the US (Sireci *et al*, 1999), achievement motivation among higher education students in Singapore (Wang *et al*, 2010), self-confidence in quantitative methods among students in Portugal (Ramos and Carvalho, 2011), and behaviour among elementary school children in the US (DiStefano *et al*, 2010).

In common with the current study, two studies apply cluster analysis methods to examine participation in structured and unstructured activities, although in these studies the focus is on adolescents rather than children. Bartko and Eccles (2003) created activity profiles for just under 1,000 US adolescents' responses in 11 activity domains (including sports, reading, chores, time with friends, community-based clubs, volunteering and paid employment). They found that the cluster groups showed meaningful and consistent differences across a range of psychosocial indicators, including academic performance, problem behaviour and mental health. The authors argued that examining profiles of participation across activity settings provided a more holistic view of teenagers' choices than did single-variable models. Linver *et al* (2009) similarly examined how development outcomes varied for youth involved in different combinations of activities. Cluster analytic methods revealed five activity clusters: sports-focused, sports plus other activities, primarily school-based activities, primarily religious groups and low activity involvement. They demonstrated that activity participation profiles made a meaningful difference to the lives of youth across a range of domains, including academic ability, self-concept of ability, pro-social behaviour and relations with friends.

Hence the cluster analysis method is a well-established and widely used approach in the social sciences. It has proven particularly effective in examining the participation of children and young people in different types of activities.

Because we are interested in the 'package' of activities in which children engage, variables indicating both the type and frequency of activities were used. A two-step cluster analysis approach was taken, using the following variables to form the clusters:

- Time spent watching television (parent report – recoded into 3 categories, namely, 'less than one hour', 'one to three hours' and 'more than three hours')
- Frequency of reading for pleasure (child report – 6 categories ranging from 'never' to 'every day')
- Time spent using ICT (parent report – recoded into 3 categories, namely, 'less than one hour', 'one to three hours' and 'more than three hours')
- Type of ICT use (child report – 'yes' or 'no' to each):
  - Learning (homework, surfing the Internet for school projects)
  - Social (chatrooms, emailing, instant messaging)
  - Cultural (watching movies, downloading music) and/or
  - Games (playing games, surfing the Internet for fun)

- Frequency of engagement in sport (child report – 4 categories ranging from 'never' to 'almost every day')
- Frequency of engagement in exercise (child report – 4 categories ranging from 'never' to 'almost every day')
- Time spent on computer/video games (parent report – recoded into 3 categories, namely, 'less than one hour', 'one to three hours' and 'more than three hours')
- Engagement in post-school cultural activities, such as music, dance, ballet (parent report – 'yes' or 'no')
- Frequency of activities with friends after school (parent report – 5 categories ranging from 'never' to '6-7 days a week')
- Frequency of involvement in household chores (scale based on child report – 8 individual items, such as 'help with cooking for the family', 'cleaning the car', response categories of 'often', 'occasionally', 'never')

Two-step cluster analysis is designed to cluster large numbers of cases, grouping these cases into clusters on the basis of a nearness criterion. The procedure uses a hierarchical agglomerative clustering procedure in which individual cases are successively combined to form clusters whose centres are far apart. The number of possible clusters was not specified in advance, so the Statistical Package for the Social Sciences (SPSS) package searched for the optimal number of clusters using the Bayesian Information Criterion (BIC). The analysis yielded five distinct clusters, ranging in size from 15% to 25% of the total sample. The profiles of these clusters are described in Chapter 3.

2.2.2   FAMILY BACKGROUND CHARACTERISTICS

The *Growing Up in Ireland* study was designed to capture the major domains of a child's life, thus yielding a holistic picture, in keeping with the ecological perspective of Bronfenbrenner (1989). *Growing Up in Ireland* provides rich background information on the socio-economic circumstances of the children and their families. The detailed information gathered on several dimensions of family background allows us to explore potential differences in activities by social class, income, parental education and other socio-demographic characteristics (see Chapter 3). The family background variables used for analysis throughout this report include the following:

Family social class: A social class classification, based on the Irish Census of Population measure, was assigned to both mother and father (where the latter was resident) based on their respective occupations. In line with standard procedures, a dominance approach (see Erikson, 1984) was used, whereby in two-parent families in which both partners were economically active outside the home, the family's social class group was assigned on the basis of the higher of the two. A sevenfold classification of family social class is used throughout this report: professional, managerial, non-manual, skilled manual, semi-skilled manual, unskilled manual, and economically inactive. The latter group refers to families where neither the mother nor father has ever held a job from which social class can be classified. These tend to be a highly disadvantaged group.

Family income: To make meaningful comparisons across families in terms of their total disposable income, it is necessary to take into account household size and composition (number of adults and children) to create what is known as the 'equivalised' family income.[3] The nine-year-old's family is then assigned to one of five income groups, from lowest to highest. Each group (quintile) contains 20% of families. Thus, throughout the report the lowest family income group refers to the 20% of families at the bottom of the income distribution (based on 'equivalised' family income, that is, income adjusted to account for the size and composition of the family). The second-lowest income group includes the families in the next 20% of the income distribution, and so on.

Parental education: Throughout the report a fivefold classification of the educational attainment of the nine-year-old's mother is used. This is based on the classification used in the Irish Census of Population. The groups are: lower secondary or less, upper secondary, non-tertiary, primary degree, and post-graduate.

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[3] To do this, the number of 'equivalised' adult members resident in the household is calculated. This is done by assigning a weight of '1' to the first adult, '0.66' to all subsequent adults, and '0.33' to each child (14 years or less). The total number of adult equivalents is then divided into the household's total disposable income, to give the household's equivalised income. It is this measure of equivalised income which is used throughout the report.

Family structure: A twofold classification of family structure is used: one-parent or two-parent. Throughout the report, one- and two-parent families refer only to the number of resident caregivers/guardians. The terms do not refer to the relationship of the caregiver to the Study Child. Biological parents and others are included in the definition of one- or two-parent families, although mothers and fathers are overwhelmingly the caregivers of the children.

Educational resources in the home: The number of books in the home is taken as a measure of the educational resources available to the child in the home. Parents were asked to select from four categories: less than 10, 10 to 20, 20 to 30, or more than 30.

Immigrant status: A family was defined as being an immigrant family if both parents had been born outside Ireland, and a non-immigrant family if at least one parent had been born in Ireland.

In addition to the family background characteristics, a number of child-level individual characteristics were used in the analysis. These included child gender, whether the child has a learning disability (as reported by their class teacher) and whether the child has a chronic illness or disability (as reported by their mother).

2.2.3   NEIGHBOURHOOD CHARACTERISTICS

A number of neighbourhood variables were used in the analysis (see Chapter 4). During the course of the interview, primary caregivers were asked their opinions on aspects of the neighbourhood in which they live: its physical condition, perceived safety, and the availability of services. The interpretation of 'neighbourhood' was left up to the respondent, with questions referring to 'your local area'. Four items asked about the physical condition of the neighbourhood (how common are 'rubbish and litter'; 'homes and gardens in bad condition'; 'vandalism' and 'people being drunk or taking drugs in public'). These scaled up to give a total score of the physical condition of the neighbourhood (alpha = 0.843). There were also two individual items on the safety of the neighbourhood: 'It is safe for children to play outside during the day' and 'There are safe parks, playgrounds and play spaces'. These were asked on a Likert scale ranging from 'strongly agree' to 'strongly disagree' and in the analysis were recoded into 'agree' or 'disagree'.

Service availability may have an impact on children's activities and thus was included in the analysis. Primary caregivers were asked to report if a number of services were available or not, in or within relatively easy access of their local area (regular public transport, GP or health clinic, schools, library, social welfare office, banking/credit union, essential grocery shopping). These individual items were summed to give a total score for service availability (alpha = 0.754) and indicate whether the child is living in a well-resourced neighbourhood or a more deprived one. This total score for service availability was used to set the context for the more child-specific child services, which were looked at individually. These items consisted of the primary caregiver's report of the availability of recreational facilities appropriate to nine-year-olds and the children's report of a green area for them to play in near where they live.

Whether a child lives in an urban or rural area may also affect the sorts of activities they are involved in, so a variable for this was included in our analysis. Primary caregivers were asked to describe the region they lived in, with options ranging from open countryside to town (broken down by population size) to city. This variable was used to classify whether each child lived in an urban or rural area. Urban areas were defined as towns or cities with a population of 10,000 or over.

External information on the neighbourhood was also linked to the file of survey data. For this purpose, neighbourhoods were based on objective measures: the sub-divisions of counties called Electoral Divisions (EDs), of which there is a total of 3,440 in the Republic of Ireland. The Central Statistics Office provides Small Area Population Statistics (SAPS) for 3,409 EDs.[4] Of these, 1,809 are represented in the ***Growing Up in***

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[4] One ED straddles two counties and is split in two; 32 EDs have low population and for confidentiality reasons have been amalgamated into neighbouring EDs.

Ireland data. The number of observations per ED varies from one to 76. The SAPS data are aggregate data from the Census of Population 2006, and are available for topics such as family structure, ethnicity, education, social class and occupation.

For the analyses in this report, the level of deprivation of the neighbourhood was estimated by using three SAPS variables that represent the socio-economic background of the neighbourhood. The three variables used were: the proportion of the population in the neighbourhood aged over 15 and unemployed, having lost or given up a job; the proportion of the over-15 population in the neighbourhood who had completed only primary education or less; and the proportion of the total population in the neighbourhood who were classified as being in the 'unskilled' social class.

2.2.4 SCHOOL CHARACTERISTICS

Detailed information at the school level (gathered from class teachers and school principals) allows us to relate engagement in out-of-school activities with the broader context within which children learn. Four school-level variables were included in the analysis (see Chapter 5):

1. School location: The school location was dichotomised into 'urban' and 'rural' to reflect the broader context of the school.

2. DEIS status: The Delivering Equality of Opportunity in Schools (DEIS) programme was introduced in 2005; its focus is on targeting additional resources towards schools with higher concentrations of disadvantage. Schools are identified for inclusion based on a range of indicators, including prevalence of unemployment, local authority (public) housing and eligibility for the free book grant scheme. Three groups of schools are targeted for additional support: urban band 1 (the most disadvantaged), urban band 2, and rural DEIS schools. In total, around 21% of primary schools in Ireland have DEIS status. In this report, we use DEIS status as a proxy for school social mix, adding a fourth category of 'non-disadvantaged' schools.

3. Language medium: Here we distinguish between English-medium schools and two types of Irish-medium schools: a Gaeltacht school, which is located in a designated Irish-speaking area, and a gaelscoil, any other school whose medium of instruction is through Irish. Gaeltacht schools and gaelscoileanna make up around 3% and 5%, respectively, of all primary schools in Ireland.

4. Gender mix of the school: Single-sex education remains an important part of the educational landscape in Ireland, accounting for 12% of all primary schools.

In addition to information on the school level, the report seeks to explore the relationship between children's activities and their learning in the classroom. Two aspects of the classroom context are considered: ICT facilities and teacher experience. ICT facilities are measured in terms of two variables based on teacher reports: whether there is a computer in the classroom and whether there is access to the Internet in the classroom. Teacher experience is measured in terms of the total years of teaching.

Chapter 6 looks at the relationship between children's out-of-school activities and their academic achievement. Academic achievement is measured in terms of children's performance in reading and mathematics, using the revised 2007 versions of the Drumcondra Reading and Mathematics tests (ERC, 2007a, 2007b). These tests, developed for Irish school-children, are linked to the national curriculum and are grade-specific.

2.2.5 MODELLING RELATIONSHIPS

Section 2.1 noted that, in the *Growing Up in Ireland* study, nine-year-old children were sampled within a set of schools selected to be representative of the total population of primary schools. Traditional regression

techniques have involved the assumption that there is no autocorrelation within the data; that is, that pupils represent independent observations, rather than being clustered within schools. However, it cannot be assumed that pupils in the same school are completely 'independent' of each other in this way. Groups rarely form at random and, once formed, the members of a group interact with each other to create even greater homogeneity (Jones, 1992). Using traditional regression procedures will therefore increase the risks of finding differences and relationships where none exist (Goldstein, 1995).

In contrast to regression procedures, multilevel modelling techniques take into account the clustering of individuals within groups (Goldstein, 1995). Such models provide more precise estimates of the effects of school (and teacher) characteristics. Multilevel models are used in this report for two purposes: first, to investigate the relationship between family, neighbourhood and school characteristics and the clusters of activities in which children engage; and secondly, to explore the relationship between these clusters of activities and children's academic performance, all else being equal. For these purposes, a three-level model is estimated, with children grouped within classes in schools. For all models, dummy variables have been included to indicate missing values. This approach has the advantage of using the total sample and thus providing more precise estimates. These dummy variables are not of substantive interest so are not reported in the tables. Analyses presented in this report were carried out using the MLwiN computer package developed at the Institute of Education, University of London (see Rasbash *et al*, 2009).

This report focuses on the children's out-of-school learning in the context of home, school and neighbourhood. In the sample, schools do not neatly map onto neighbourhoods; not all pupils in a school will come from the same neighbourhood and many schools will draw on pupils from a diversity of areas. Should neighbourhood then be considered as a distinct 'level' for modelling purposes? In other words, should we consider children as nested within neighbourhoods rather than within schools? School-level models are used here for a number of reasons. First, school-based sampling resulted in very small numbers in some neighbourhoods (measured in terms of electoral divisions); there are 1,809 neighbourhoods represented in the *Growing Up in Ireland* data and many of these have only one child living in them. Small numbers in neighbourhoods will complicate any multilevel analysis done at the neighbourhood level. Secondly, it is hardly likely that the mothers surveyed were thinking in terms of the electoral division when they answered questions about the characteristics of their local area. Respondents can and do have differing views on the quality of their local environment, depending on the part of the area in which they live. For these reasons, neighbourhood characteristics are considered as independent variables at the child level. To test the implications of this approach, the models presented in Chapter 3 were estimated using a child-neighbourhood rather than a child-class-school model. The two sets of estimates were remarkably consistent and so school-based models are used in the remainder of the report.

2.3 RESEARCH QUESTIONS AND HYPOTHESES

In this section, we draw on the existing research (discussed in Chapter 1) to frame the main research questions addressed in the report, along with the related hypotheses.

Question 1
(a) What clusters of out-of-school activities do nine-year-old children in Ireland engage in?
(b) To what extent do these clusters of activities vary by gender, social class background, family structure and immigrant status? Are out-of-school activities different for children with learning disabilities and/or chronic illness?

Hypotheses:
1. Participation in different clusters of activities will vary by social background, with middle-class children being more likely to participate in structured activities, especially cultural activities. The *Growing Up in*

Ireland study collected rich information on social background, including social class, income, parental education, family structure, and educational resources in the home. Among the different dimensions of social background, we hypothesise that parental education and educational resources in the home will have a stronger effect on participation, due to the 'concerted cultivation' at play, but low income will operate as an additional barrier because of the paid nature of many out-of-school activities.

2. Girls and boys will differ in the clusters of activities they engage in, with girls more likely to participate in cultural activities and boys in sports.

Question 2

How does the neighbourhood context within which children live shape their out-of-school activities?

Hypotheses:

3. The social profile of the neighbourhood will affect participation in out-of-school activities, with more structured activities in middle-class neighbourhoods as 'concerted cultivation' becomes the social norm.
4. Access to recreational facilities in the local area will increase involvement in structured activities. Access to a safe play area or green space in the neighbourhood will boost involvement in unstructured activities, with the corollary that children living in unsafe neighbourhoods will be more involved in structured, supervised activities.

Question 3

To what extent are the schools children attend and the kinds of formal learning to which they have access associated with their informal learning opportunities outside school?

Hypotheses:

5. Because of the absence of research on school effects on out-of-school activities, it is more difficult to derive precise hypotheses. However, we hypothesise that children attending schools with a concentration of disadvantaged pupils will be less involved in structured, particularly cultural, activities. Because of these schools' emphasis on the Irish language and cultural heritage, we expect children attending gaelscoileanna to have greater involvement in cultural activities. We also expect that attending a single-sex school is likely to reinforce the gendering of out-of-school activities.
6. It is hypothesised that learning experiences in the classroom may serve to prompt interest in certain out-of-school activities. Thus, having access to a computer and the Internet in the classroom may provide children – especially those who do not have access to a computer at home – with the skills and competencies to pursue an interest in ICT outside school. Teacher gender is expected to reinforce the gendering of out-of-school activities.

Question 4

Do formal learning outcomes, measured in terms of reading and mathematics achievement, vary systematically according to children's participation in out-of-school activities?

Hypothesis:

7. We expect involvement in certain kinds of out-of-school activities, particularly cultural and sports activities, to be associated with educational performance, as measured by reading and mathematics performance. We expect the relationship with out-of-school activities to be stronger for reading because of the greater influence of school-based factors on the development of mathematical skills (see Mortimore *et al*, 1988).

These hypotheses are tested in the remainder of the report. Chapter 3 looks at social background and gender influences on participation in out-of-school activities, while the relationships with neighbourhoods and schools are examined in Chapters 4 and 5 respectively. In Chapter 6, we test hypothesis seven, by looking at the relationship of out-of-school activities with academic performance. Chapter 7 outlines the main findings of the research and discusses the implications for policy development.

Chapter 3
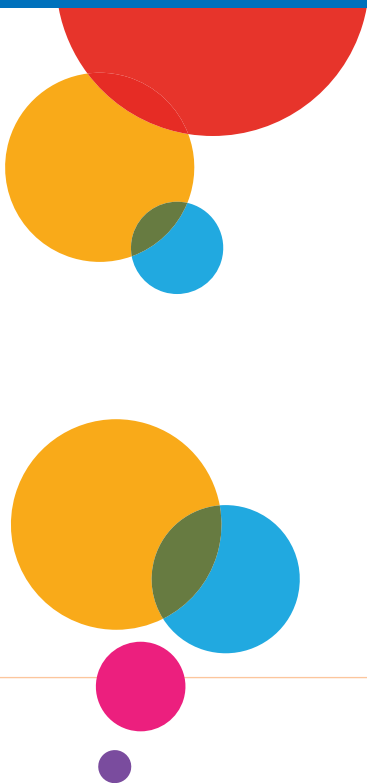
3.1   INTRODUCTION

This chapter examines the kinds of activities engaged in by children and how these vary by social background and gender. Chapter 2 outlined the cluster analysis used, which grouped children on the basis of the type and frequency of activities in which they engage. The analysis takes into account a range of different activities, including structured activities (sports and cultural clubs/classes), active recreation (sports and exercise), sedentary pursuits (including watching television and playing video games), the use of ICT for different purposes, spending time with friends, and helping out with chores at home. The cluster analysis yielded five distinct clusters, the profiles of which are depicted in Table 3.1. These clusters can be characterised as:

1. *TV and sports*: this group makes up 23% of nine-year-olds. They have a high level of involvement in sports, are more likely to spend almost every day after school with their friends, and spend more time watching television than other groups. They have some involvement in cultural activities but do not spend significant amounts of time reading for pleasure. What singles this group out is the low level of ICT use.

2. *Social networkers*: this group makes up 18% of nine-year-olds. They spend more time with their friends than most other groups, have a fair degree of involvement in cultural activities, and some involvement in sports. What singles this group out is their high and diverse use of ICT; they are the only group who use computers for social networking.

3. *Sports and computer games*: this group makes up 20% of nine-year-olds. They spend more time on sports and video games than other groups. They have no involvement in post-school cultural activities and lower levels of reading for pleasure. They use computers for fun and games and sometimes for school-related activities.

4. *Cultural activities*: this group makes up 25% of nine-year-olds. Their out-of-school lives are characterised by both solitary cultural activities (reading for pleasure) and organised cultural activities (after-school lessons or groups). They spend less time with their friends after school and watch less television than the other groups. They also have less involvement in sport and video games.

5. *Busy lives*: this group, which makes up 15% of nine-year-olds, is characterised by the diversity of activities. They have fairly high levels of involvement in using ICT, and moderate levels of reading, and of participation in cultural activities, sports and video games.

It is worth noting that differentiation in terms of structured as opposed to unstructured activities is not as marked as might have been expected on the basis of international research (see Chapter 1). Taking part in cultural classes or clubs emerges as a differentiating dimension. In contrast, participation in sports/fitness clubs is relatively high among children in our sample, so membership per se does not distinguish between different groups of children. Instead, our analysis reveals the importance of taking account of different types and frequency of activities, with use of ICT emerging as a relatively strong source of differentiation in children's out-of-school lives (see Table 3.1).

In our analysis, we focus initially on the characteristics of children who fall into each of the five clusters of activities outside school. This gives us important insights into the opportunities children from different social backgrounds have to engage in informal learning. The results show notable gender and social class differences in cluster membership, indicating differences in the out-of-school lives of children from different backgrounds.

Table 3.1: **Profile of Activities by Cluster**

	TV and sports	Social networkers	Sports and computer games	Cultural activities	Busy lives
Television: % 3+ hours per night	13.8	11.9	10.6	6.7	10.4
Videogames: % 3+ hours per night	23.0	23.8	25.7	12.1	21.7
Reading for pleasure; % 'every day'	27.1	32.5	27.5	38.1	29.7
Spending time with friends: % 6-7 days a week	30.3	30.1	26.5	18.0	28.5
Use of ICT:					
% for fun	0.0	94.6	100.0	100.0	99.9
% for learning	11.8	64.8	44.4	48.5	57.6
% for social	0.7	100.0	0.0	0.0	0.0
% for culture	3.1	41.8	0.0	0.0	100.0
Sports: % 'almost every day'	46.0	44.3	48.2	38.5	44.6
Exercise	56.4	57.3	58.8	52.6	57.4
% in post-school cultural activities (classes/clubs)	40.8	51.7	0.0	100.0	48.0
Chores (average involvement)	1.93	1.94	1.89	1.95	1.94
Time spent on homework: % 1+ hours per night	28.5	22.7	27.2	25.6	26.3

3.2   DESCRIPTIVE RESULTS

Boys and girls were found to differ in their out-of-school activities (Figure 3.1); boys were more likely to engage in sports/computer games and girls to fall into the cultural activities group. Nearly 30% of girls fell into this group, twice the proportion of boys. There was also some evidence that girls were more likely to be 'social networkers', spending time with friends and using ICT as a way of communicating with friends more frequently.

Figure 3.1:   Gender and Out-of-School Activities
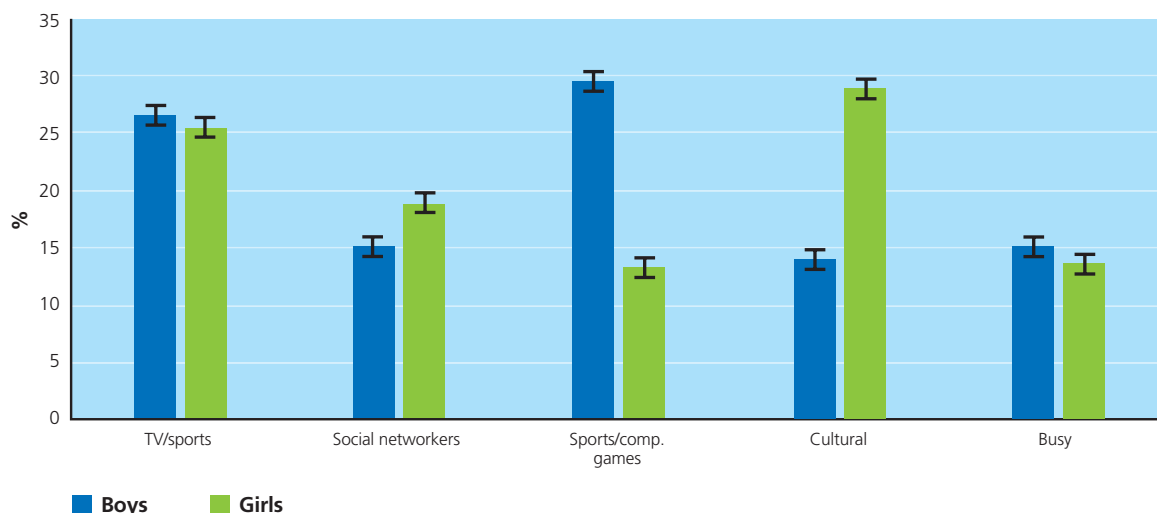
Figure 3.2 presents the cluster membership of children from different social class backgrounds. Children from unskilled manual backgrounds and economically inactive households were much more likely to spend time on sports and watching television. Nearly half of children from economically inactive households were in the TV/sports group. Children from working-class backgrounds were somewhat more likely to be involved in sports/computer games (accounting for typically one-quarter of these children) than children from more advantaged backgrounds. In keeping with both Irish and international research (McCoy *et al*, 2011), participation in cultural activities was strongly differentiated by social class; one in three children from professional backgrounds were engaged in cultural activities compared to less than one in 10 of the most disadvantaged children. This is a significant finding, particularly since these types of structured activities have been found to enhance school engagement and academic performance (McCoy *et al*, 2011). Similar patterns emerge when we consider parental education, with much higher levels of participation in cultural activities among the children of parents with third-level qualifications and children in homes with more educational resources such as books. So, at first glance, it appears that both social class and parental education are related to the nature of children's out-of-school activities.

Figure 3.2:   Social Class and Out-of-School Activities

Legend: ■ Busy ■ Cultural ■ Sports/comp. games ■ Social networkers ■ TV/sports
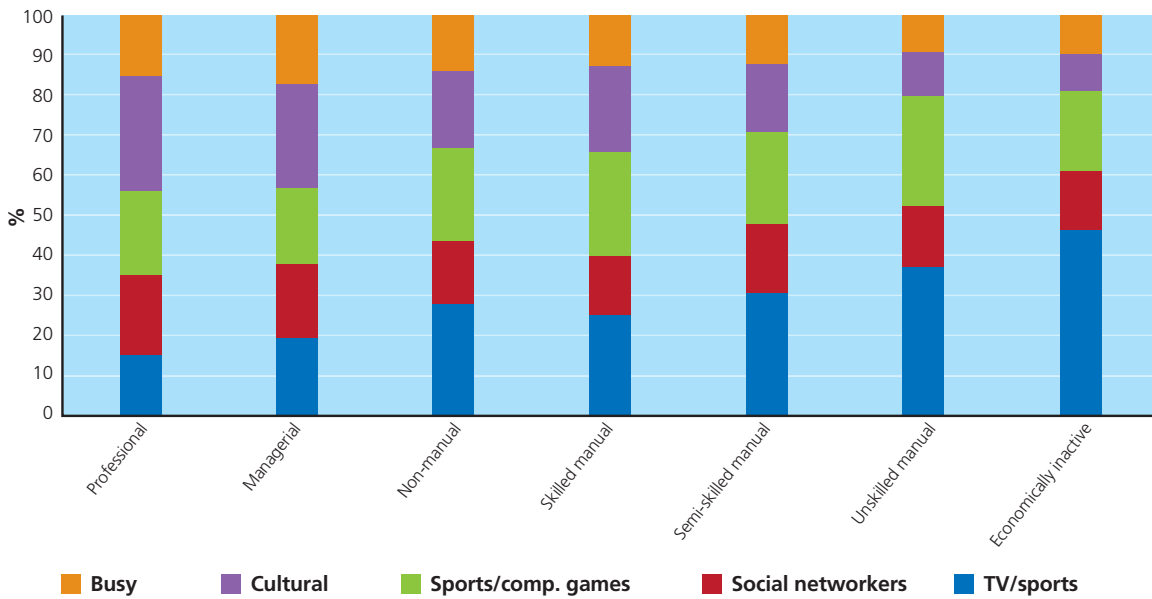
When we consider the relationship between gender and social background, it appears that girls from more advantaged families were particularly likely to participate in cultural activities (Figure 3.3). There is also evidence that girls from middle and higher-income families were more likely to be social networkers, having frequent contact with their friends through both face-to-face and online media. It is interesting to see little variation across income groups in the proportion of boys participating in sports/computer games, while girls from the highest income groups had lower levels of participation in sports than girls from other income groups, largely reflecting the dominance of cultural activities among socio-economically advantaged girls.

Figure 3.3:   Gender, Family Income and Out-of-School Activities

Legend: ■ Busy ■ Cultural ■ Sports/comp. games ■ Social networkers ■ TV/sports
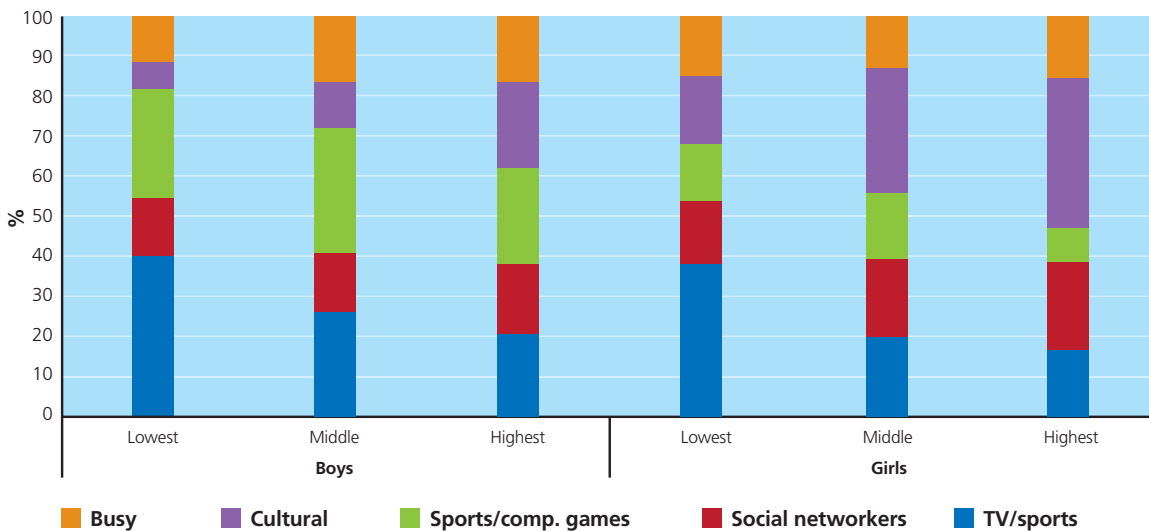
Taking account of family structure and whether the child lives in a one- or two-parent family provides additional insights into variation in children's activities. While participation in cultural activities was much higher for girls, girls living with two parents were more likely to engage in these activities. One in three girls from two-parent families participated in these activities compared to less than 16% of girls in one-parent households (Figure 3.4). While boys were less likely to engage in cultural activities, boys living with two parents also had higher levels of participation. Multivariate analysis in the next section will assess the extent to which these differences reflect the social composition of one- and two-parent families.

Figure 3.4:   Gender, Family Structure and Out-of-School Activities
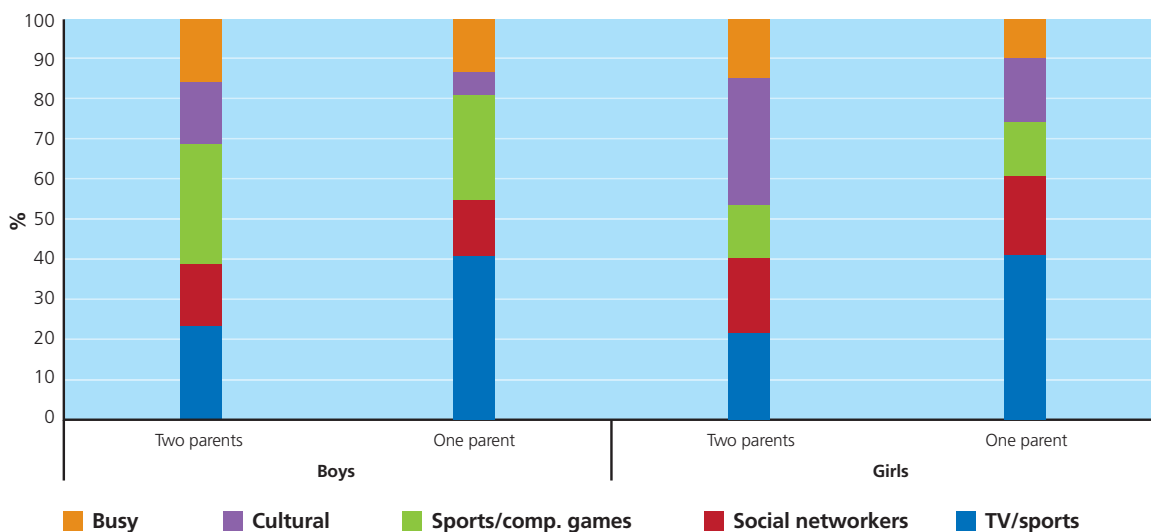
As regards immigrant status, we found few notable differences in children's out-of-school lives, with the exception of slightly higher levels of participation in cultural activities among children of Irish-born parents (22% versus 15%), while children from immigrant families were more likely to be 'social networkers' (23% versus 16%).

While chronic illness or disability did not appear to affect the nature of children's activities, those identified with a learning disability were less likely to participate in cultural activities (Figure 3.5); 13% of children with learning disabilities participated in cultural activities compared to 22% of children without such disabilities. This group also spent more time on television and sports than those without a learning disability (40% compared with 25%). Again, multivariate analyses will examine whether this reflects the social composition of the groups, which is particularly important given significant variation across social class groups in the incidence of learning disabilities (Banks and McCoy, 2011).

Figure 3.5:   Learning Disability and Out-of-School Activities
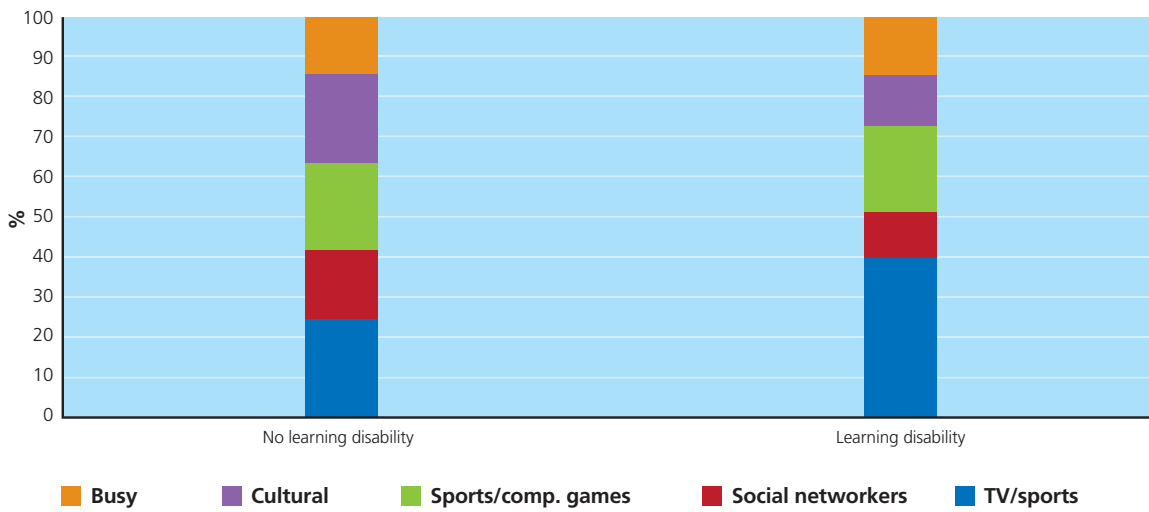
3.3   MULTILEVEL MODEL

For the most part, the social differentiation in the lives of children remained when we considered the composition of the different groups in a multilevel model. In keeping with earlier research (McCoy *et al*, 2011), boys were significantly more likely to participate in sports/computer games, less likely to engage in cultural activities and less likely to use the computer for social networking (Table 3.2). Children from professional and managerial backgrounds were more likely to engage in both cultural pursuits and social networking than children from semi- and unskilled manual backgrounds. Relative to the lowest income quintile, all other income groups had higher levels of participation in cultural activities, suggesting a financial barrier to such participation. Social networking was also more prevalent among higher-income groups, again perhaps reflecting the costs of ICT and online access in the home. Hence, in keeping with hypothesis 1, the results suggest that low income operates as an additional barrier because of the paid nature of many out-of-school activities.

Parental education was also strongly related to participation in cultural activities; children of third-level-qualified parents were significantly more likely to engage in these activities, above and beyond the effects of social class and family income. Educational resources in the home were similarly significantly related to participation in cultural activities. This reflects the 'concerted cultivation' argument of Lareau and is in keeping with our hypothesis that parental education and educational resources in the home will be related to participation in cultural activities. In fact parental education and educational resources had a stronger effect on participation in cultural activities than social class effects, also as hypothesised. Children in one-parent families were less likely to participate in each of the four activity groups compared to children living with two parents. Children from immigrant families were more likely to be social networkers but less likely to engage in cultural activities. Finally, children with learning disabilities were less likely to take part in cultural activities, even when we take account of the social composition of this group. These children were also less likely to be social networkers. Out-of-school activities did not appear to differ between children with a chronic illness/disability and other children.

Table 3.2: **Multilevel Multinomial Logistic Regression Model of the Association between Gender and Social Background Factors and Cluster Membership, Compared to Base Category 'TV/sports'**

	Social networkers	Sports and computer games	Cultural activities	Busy lives
Constant	-0.618	-1.101	-1.154	-1.154
Male	-0.334***	0.814***	-0.821***	0.023
Social class:				
Professional	0.318*	0.153	0.468***	0.291
Managerial/technical	0.254*	-0.094	0.484***	0.307*
Non-manual	-0.091	-0.123	0.095	-0.027
Skilled manual	-0.054	-0.042	0.274*	-0.047
Economically inactive	-0.189	-0.282	-0.174	-0.252
(Base: semi-unskilled manual)				
Family income quintile:				
2nd lowest	0.028	0.080	0.193*	-0.005
Middle	0.292**	0.322***	0.257**	0.182
2nd highest	0.310**	0.288**	0.212*	0.157
Highest	0.389***	0.024	0.366***	0.268**
(Base: lowest income)				
One-parent family	-0.326**	-0.607***	-0.943***	-0.676***
Mother's education:				
Upper secondary	0.145	0.229**	0.635***	0.181
Non-tertiary	0.176	0.129	0.748***	0.218*
Primary degree	0.555***	0.243*	1.030***	0.360**
Post-graduate	0.201	-0.267	0.975***	0.159
(Base: Lower secondary or less)				
Books in the home:				
10-20	-0.072	0.451***	0.350*	0.232
20-30	-0.052	0.375**	0.455**	0.334*
30+	0.111	0.438***	0.774***	0.453***
(Base: <10 books)				
Immigrant family	0.450***	0.156	-0.326**	0.342**
Learning disability	-0.630***	-0.336**	-0.502***	-0.058
Chronic illness/disability	0.124	0.100	-0.040	-0.068
N	8,217 pupils in 1,899 classes in 869 schools			

Note: *** $p<.001$; ** $p<.01$; * $p<.05$

3.4   CONCLUSIONS

This chapter has examined how the nature of children's out-of-school lives varies across dimensions of social background, parental education and child characteristics such as learning disability and chronic illness. Cluster analysis yielded five distinct clusters of activities: TV and sports; social networkers; sports and computer games; cultural activities; and busy lives. Descriptive results showed considerable differences between boys and girls and children from different social class backgrounds in their out-of-school activities. Cultural activities appeared more prevalent among girls, particularly middle-class girls. Boys, in contrast, were more likely to fall into the sports/computer games group, with little variation across social class groups.

Simultaneously taking account of children's social background, family structure, and learning disability and chronic illness, the results showed important social differentiation in the lives of children. Both economic and educational/cultural capital appeared to make a difference to the nature of children's activities; greater participation in cultural activities is evident among children from middle-class and higher-income families, and those with third-level-qualified parents. While children with a chronic illness/disability did not differ from their peers, those with learning disabilities were less likely to take part in cultural activities and to use ICT as a means of communicating with friends.

Chapter 4

NEIGHBOURHOOD FACTORS AND OUT-OF-SCHOOL ACTIVITIES
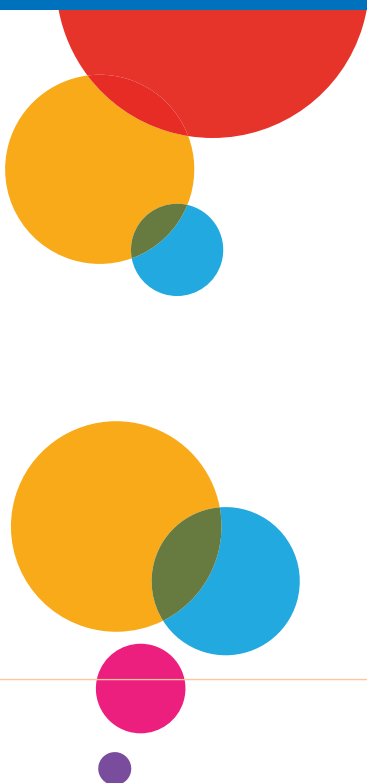
4.1   INTRODUCTION

In keeping with the ecological perspective of *Growing Up in Ireland*, it is important to focus not just on the child's family and school but to also take account of the characteristics of the neighbourhood in which the child is living. In this chapter, we examine if the neighbourhood in which a child lives is related to the kinds of out-of-school activities in which he or she participates. Previous research has mostly focused on neighbourhood effects on children's physical activity, but this analysis encompasses a wider range of activities. In Chapter 2, we hypothesised that more structured activities would be more common in more middle-class neighbourhoods (hypothesis 3) and more unstructured activities more common in neighbourhoods where children had access to a safe play area or green space (hypothesis 4). This chapter looks at the relationships between neighbourhood characteristics and out-of-school activities on a descriptive level and then goes on to use multilevel modelling to examine whether neighbourhood factors are related to children's out-of-school activities, controlling for children's social background and gender.

4.2   DESCRIPTIVE RESULTS

4.2.1   PHYSICAL CONDITION AND SAFETY OF THE NEIGHBOURHOOD

Chapter 2 outlined the range of information on neighbourhood factors available in the *Growing Up in Ireland* study, including perceptions of the local area, the presence of local services and facilities, and the social profile of the neighbourhood in terms of unemployment, social class and education. Looking at the individual items in relation to the primary caregiver's perception of the physical condition of their neighbourhood, the most pervasive problem appeared to be rubbish and litter lying about; 34% of primary caregivers reported this as being 'very common' or 'fairly common'. This was followed by people being drunk or taking drugs in public (15%), vandalism and deliberate damage to property (15%), and homes and gardens in bad condition (10%). These individual items were summed to give a total score for the physical disorder of the neighbourhood ranging from four to 16, with higher scores indicating higher levels of physical disorder (that is, rubbish, vandalism, etc, being more common). Looking at this overall rating (total score) of the physical condition of the neighbourhood (Figure 4.1), we can see that there was a difference for children classified as being involved in cultural activities. It appears that children in this group were living in neighbourhoods with less physical disorder (in terms of 'rubbish and litter'; 'homes and gardens in bad condition'; 'vandalism' and 'people being drunk or taking drugs in public') compared to any of the other groups.

Figure 4.1:   Level of Physical Disorder in the Neighbourhood and Out-of-School Activities
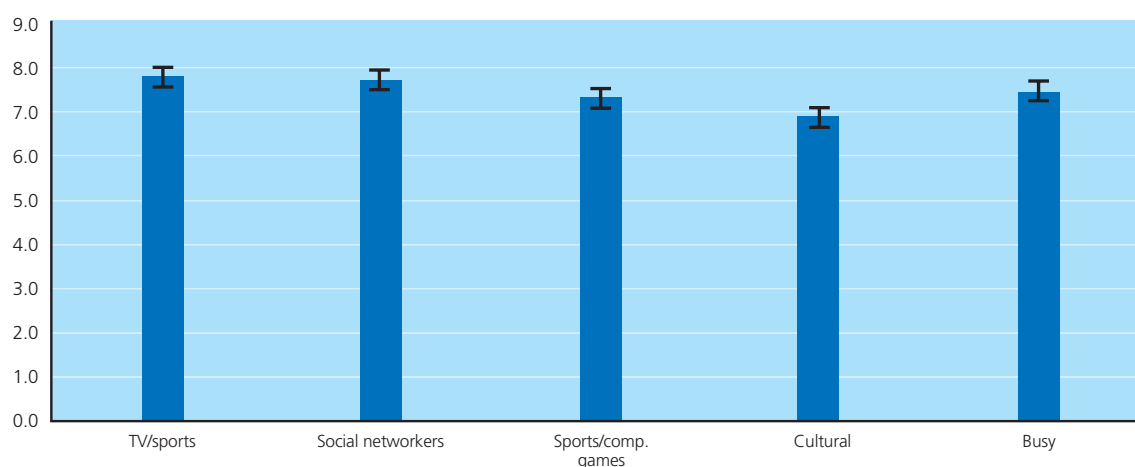
The differences in activities by the perceived safety of the neighbourhood were less striking. No significant differences in activities were found between those who reported that it was safe for children to play outside during the day and those who disagreed with this statement, though it must be noted that overall a very high proportion of parents (91%) reported that it was safe for children to play outside during the day. Figure 4.2 shows the differences between activity groups in relation to parents' report of safe parks, playgrounds and play spaces in the local area. The only difference which emerged was for the social networkers; children in neighbourhoods with safe play areas were more likely to be classified as social networkers than children in less safe neighbourhoods (18% compared to 15%).

Figure 4.2:   Safety of the Neighbourhood and Out-of-School Activities
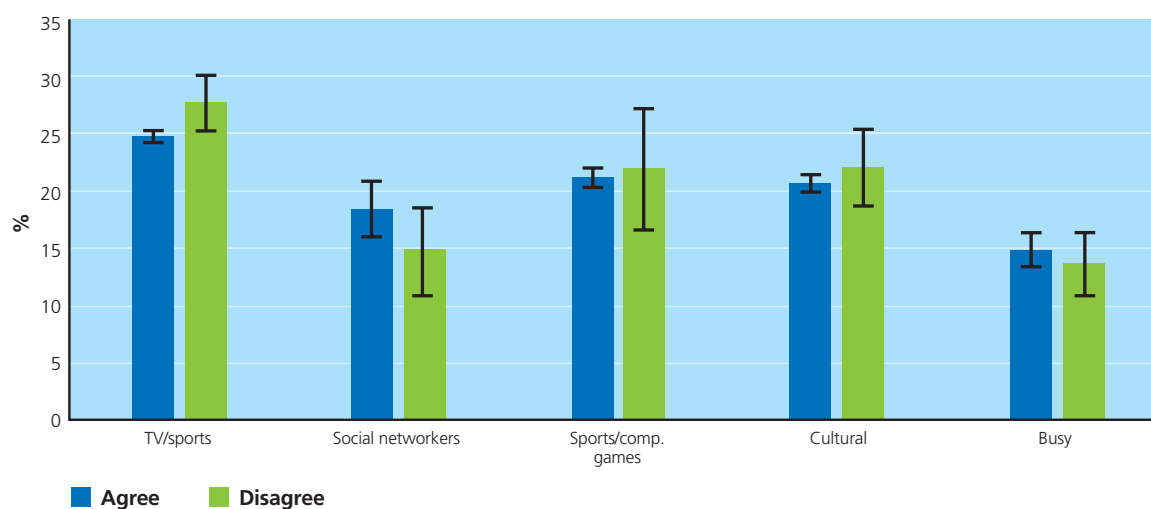
4.2.2   SERVICE AVAILABILITY AND REGION
Overall, 57% of primary caregivers reported that there were recreational facilities appropriate to a nine-year-old in their local area. However, the proportion of children reporting that there was a green area for them to play in near where they lived was much higher, at 82%. There was little differentiation concerning the availability of individual services relating specifically to nine-year-old children. There was no significant differentiation in terms of availability in their neighbourhood of recreational facilities suitable for nine-year-old children. The only group where a difference in relation to having a green area to play in was evident was again the social networkers (Figure 4.3). Children were more likely to be classified as being in this group if they lived in neighbourhoods where green areas to play in were available (18% compared to 14%).

Figure 4.3:   Green Areas to Play in, in the Neighbourhood, and Out-of-School Activities
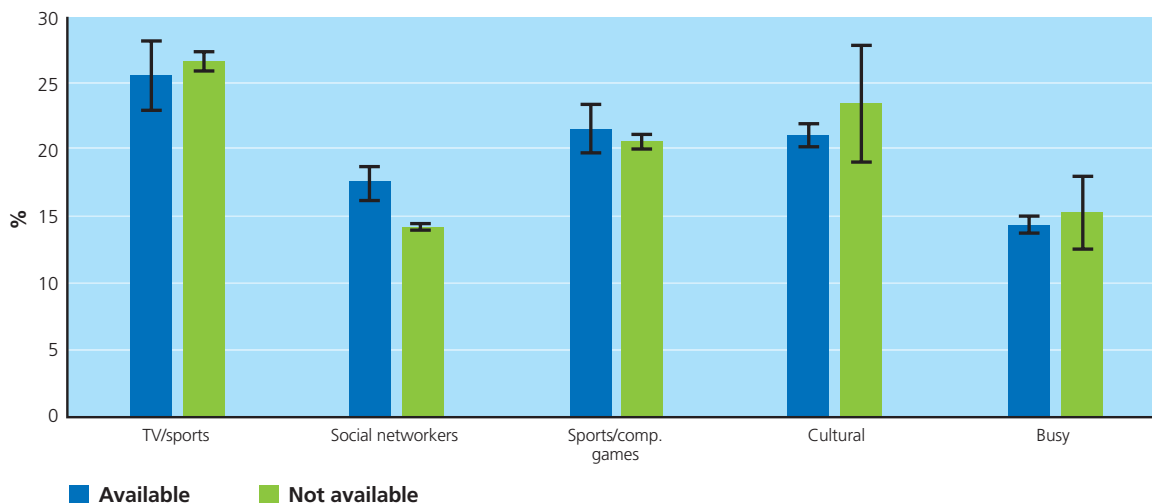
There were more striking differences notable between urban and rural children (Figure 4.4). Urban children were significantly more likely to be social networkers than rural children (22% compared to 13%), whereas they were less likely than rural children to belong to the sports/computer games group (19% compared to 23%) and the cultural activities group (19% compared to 23%).

Figure 4.4:   Region and Out-of-School Activities
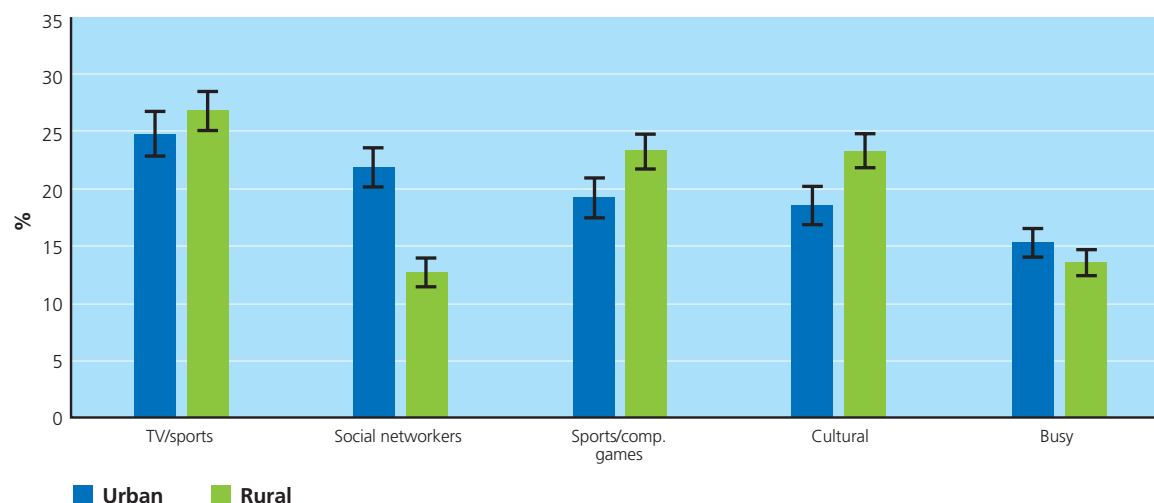
4.2.3   NEIGHBOURHOOD SOCIO-ECONOMIC STATUS

There was also some variation between groups in terms of the measures of neighbourhood socio-economic status. Figure 4.5 shows the difference between the mean of each group and the overall mean for each of the three measures of neighbourhood socio-economic status. The information is presented in this way because the levels of each of the socio-economic characteristics vary: the percentage of unemployed (overall mean = 4.4%); the percentage with low education (overall mean = 17.6%); and the percentage of unskilled

social class (overall mean = 4.3%). Children in the TV/sports group tended to live in neighbourhoods characterised by above-average levels of unemployment, low education and unskilled social class. Conversely, children involved in cultural activities and those with busy lives tended to live in neighbourhoods characterised by below-average levels of the three characteristics of unemployment, low education and unskilled social class.

Figure 4.5:   Socio-economic Characteristics of Neighbourhood and Out-of-School Activities
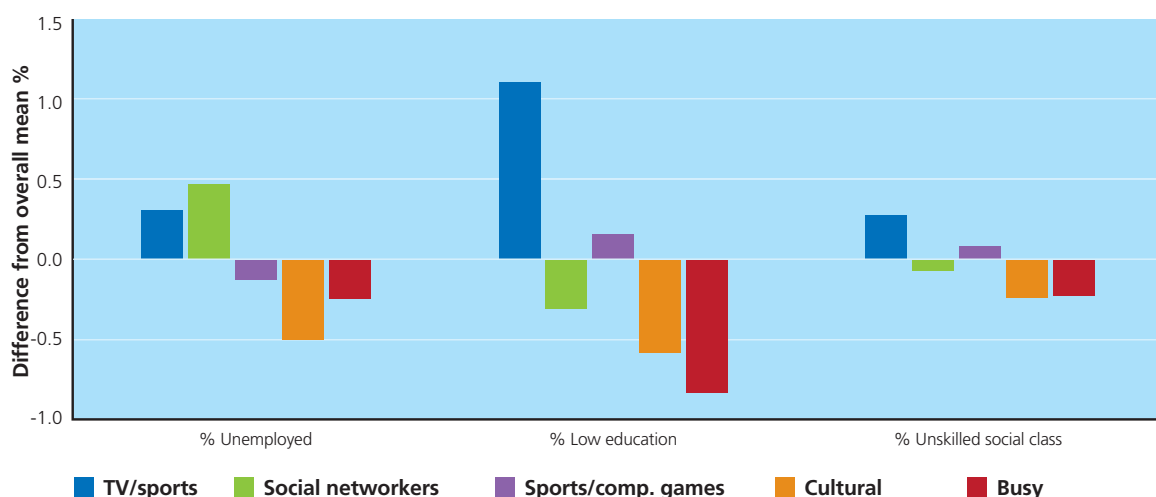
4.3   MULTILEVEL ANALYSIS

The section above highlights apparent differences between neighbourhoods in terms of the out-of-school activities in which children are engaged. It is important, however, to take into account individual-level variables (which may affect the selection of families into neighbourhoods) when studying the effects of neighbourhood characteristics.

To take account of individual-level variables and also of the multilevel nature of the data, a multilevel multinomial regression model was used, including all of the neighbourhood characteristics discussed above as well as the individual background variables discussed in Chapter 3. Table 4.1 looks at the relationship between neighbourhood factors and out-of-school activity groups without controlling for any individual characteristics (except for child's gender, as we saw in Chapter 3 that this had a large impact on children's activities). Table 4.2 looks at the effect of neighbourhood factors while controlling for the same social background factors that were examined in Chapter 3. (These social background effects are described in Chapter 3 and thus not presented again here.)

From Table 4.1 we can see that the physical condition of the child's neighbourhood was related to the types of out-of-school activities in which they engaged. As the level of disorder increased, children were less likely to be involved in all groups of activities, as compared to the TV/sports group. However, when we take account of the social background characteristics of the children, we see that this effect still holds only for the cultural activities group. Children from the more physically disordered neighbourhoods were less likely to be involved in cultural activities compared to TV/sports.

We also hypothesised that children who had access to safe play areas and green spaces to play in would be more likely to be involved in more unstructured activities, as parents would allow them more freedom and independence in their choice of activities. Table 4.1 shows that children in neighbourhoods where it is safe to play outside during the day were less likely to be involved in cultural activities; however, this difference

can be accounted for by the differences in the children's background characteristics. And when individual characteristics are taken into account, children who had a green area to play in were more likely to be involved in cultural activities. There was also a difference between the socially networked group and the TV/sports group in terms of safety of the neighbourhood and access to green spaces to play in; children in safer neighbourhoods and with access to green spaces are more likely to belong to the networked group than the TV/sports group, even when individual social background is accounted for. Children living in areas with recreational facilities suitable for nine-year-olds were more likely to be involved in cultural activities than TV/sports, but this is mostly accounted for by the children's social background and drops to borderline significance when these factors are taken into consideration.

Children from urban areas were significantly more likely than children from rural areas to be both social networkers and to lead busy lives, and this relationship holds even when we take social background into account.

There seems to be a more mixed picture when we look at the social background of the neighbourhood in relation to unemployment, education and social class, and the relationship with individual social background. Children living in neighbourhoods with higher levels of unemployment were more likely to be social networkers but less likely to be involved in sports/computer games, cultural activities or busy lives, which holds quite well with our third hypothesis. However, when individual social background is accounted for, this relationship only holds for the social networkers. The only relationship that holds with the educational profile of the neighbourhood, net of individual characteristics, is that children in neighbourhoods with higher levels of low-educated people were less likely to be in the busy lives group than the TV/sports group. When we look at neighbourhood effects alone, children in neighbourhoods with higher levels of adults from the unskilled social class were less likely to be involved in cultural activities, but this effect did not hold when we take account of individual social background. However, once we take account of social background, the effect on the social networkers group becomes statistically significant, with children in these neighbourhoods being less likely to be social networkers as compared to the TV/sports group.

It should be noted that, although the neighbourhood social background differences appear to be smaller than the urban/rural, green spaces and safety differences, these neighbourhood background effects represent the change in the dependent variable for a 1% increase in the independent variable. For example, it would take roughly a 6.5% increase in the proportion of people unemployed to have the same effect as comparing urban areas to rural areas. Overall, therefore, there may be large differences between the most disadvantaged and least disadvantaged areas.

Table 4.1: Multilevel Multinomial Logistic Regression Model of Neighbourhood Factors and Cluster Membership, compared to Base Category 'TV/sports'

	Social networkers	Sports and computer games	Cultural activities	Busy lives
Constant	-0.227	-0.388	1.734	0.064
Male	-0.349***	0.798***	-0.083***	-0.028
Neighbourhood factors				
Physical disorder	-0.124**	-0.104*	-0.340***	-0.155**
Safe to play outside	0.209±	0.162	-0.200*	0.048
Safe parks and play spaces	0.159*	-0.051	-0.039	0.091
Green spaces to play in	0.134±	0.082	0.119±	0.052
Recreational facilities	0.103	0.004	0.249***	0.075
Urban location	0.494***	-0.010	0.012	0.230**
Service availability	-0.011	0.008	-0.009	0.011
% unemployed	0.058***	-0.036*	-0.065***	-0.039*
% low education	-0.014*	-0.006	-0.009±	-0.014*
% unskilled social class	-0.071	0.003	-0.062***	-0.033

Note: *** p<.001; ** p<.01; * p<.05; ± p<.10

Table 4.2: Multilevel Multinomial Logistic Regression Model of Neighbourhood Factors and Cluster Membership, controlling for Individual Social Background, compared to Base Category 'TV/sports'

	Social networkers	Sports and computer games	Cultural activities	Busy lives
Constant	-1.464	-1.280	-0.494	-1.173
Male	-0.356***	0.817***	-0.843***	-0.027
Neighbourhood factors				
Physical disorder	-0.011	-0.036	-0.218***	-0.055
Safe to play outside	0.227*	0.162	-0.165±	0.062
Safe parks and play spaces	0.158*	-0.038	-0.048	0.096
Green spaces to play in	0.191**	0.111	0.197**	0.091
Recreational facilities	-0.017	-0.019	0.110±	-0.010
Urban location	0.545***	0.094	0.112±	0.304***
Service availability	-0.001	0.008	0.006	0.018
% unemployed	0.083***	-0.018	-0.027±	-0.015
% low education	-0.009	-0.005	-0.001	-0.010±
% unskilled social class	-0.044*	0.014	-0.020	-0.009

Note: *** p<.001; ** p<.01; * p<.05; ± p<.10. Controls are included for social class, family income, family structure, mother's education, immigrant status, learning disability and chronic illness status.

4.4   CONCLUSIONS

This chapter has explored the relationship between neighbourhood characteristics and children's out-of-school activities, an issue generally neglected in research on children's recreation. The *Growing Up in Ireland* study collected rich information on neighbourhood factors, including subjective perceptions of the quality of the environment as well as objective measures on the social profile of the local area. The vast majority (91%) of mothers reported that it was safe for their children to play outside. However, a significant proportion (42%) of mothers reported the absence of safe parks or play areas, and a similar proportion indicated that their local area lacked recreational facilities appropriate to a nine-year-old. The perceived level of physical disorder (e.g. litter, vandalism, etc) varied across different groups of mothers.

Out-of-school activities were found to vary by the characteristics of the neighbourhood in which children live. Urban children were significantly more likely to be social networkers and have 'busy lives' than their rural counterparts, all else being equal. Being engaged in cultural activities was associated with living in a more orderly neighbourhood, with green spaces to play in. Social networking was more prevalent where it was safe to play outside and where there were safe parks and other green spaces.

Chapter 5

SCHOOL FACTORS AND OUT-OF-SCHOOL ACTIVITIES
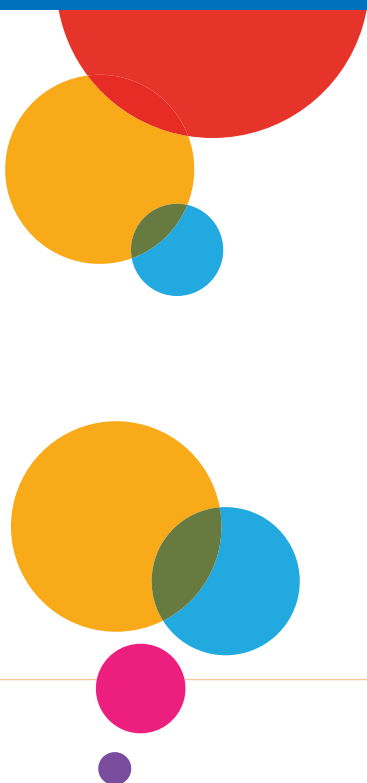
5.1   INTRODUCTION

Not surprisingly, research on children's learning generally focuses on the formal school setting. However, as discussed in Chapter 1, there is emerging research internationally that shows how children's activities outside school can enhance or hinder their learning. Despite this emerging body of evidence, there has been little focus on the interplay between home and school in this process. In particular, we know little about whether school-based learning can spark children's interest in pursuing certain hobbies and activities outside school. Similarly, little is known about whether skills developed in the classroom (for example, computer literacy) are associated with children's use of these skills in other contexts. In this chapter, we attempt to address this gap in knowledge by exploring the extent to which the nature of out-of-school activities is related to the characteristics of schools attended by nine-year-olds and the nature of their classroom activities, especially the use of ICT.

In Chapter 1, we hypothesised that the nature of out-of-school activities is likely to vary by school sector (hypothesis 5) and by the learning environment of the classroom (hypothesis 6). Before looking at these relationships, we look at the patterns of participation in ICT use, reading and cultural activities within the school setting. The chapter then looks at the relationships between school characteristics and out-of-school activities on a descriptive level, before using multilevel modelling to examine whether school factors are related to the type of out-of-school activities, controlling for children's social background and gender.

5.2   DESCRIPTIVE RESULTS

5.2.1   ICT PROVISION AND USE AT SCHOOL

Recent years have seen a rapid increase in the use of information technology, especially among children and young people, although continuing social differentiation is evident in access and use. The extent to which the use of ICT in schools has lagged behind that in the wider society has been the subject of much comment and criticism, but there has been little empirical research to document this relationship in the Irish context. The *Growing Up in Ireland* data enable us to explore the extent to which some children have no access to computers, either in home or at school.[1] Looking at the extent to which children have access to computers at home and at school, we found that two-thirds had both a PC at home and one (or more) computer(s) in their classroom; almost a fifth (19%) had a PC at home but not in their classroom, while over a tenth (11%) had no PC at home but one in their classroom. Only a small proportion (4%) of children had no access to computers at home or in their classroom.

Figure 5.1:   Access to a Computer in the Classroom by School and Teacher Characteristics

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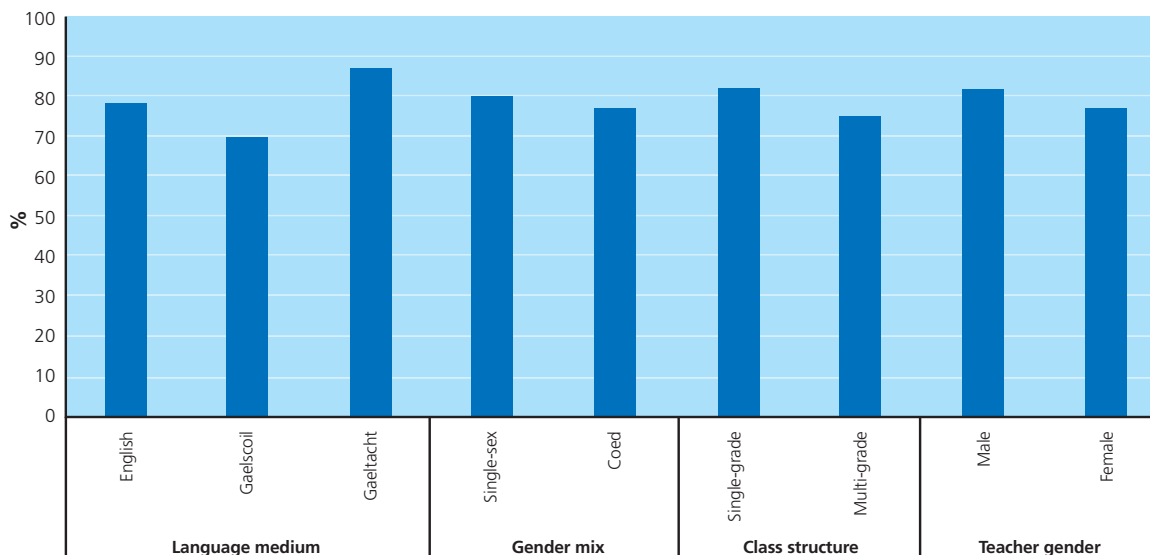
[1] There patterns relate to 2007/2008 and so do not reflect more recent investment in school ICT.

To what extent does ICT access vary across different kinds of school? Three dimensions of school sector were explored: disadvantaged (DEIS) status, language medium and gender mix. Access to a computer in the classroom did not vary by school disadvantaged status, a proxy for the social mix of the school. There was some variation by language medium (see also Shiels *et al*, 2011), with access being highest in Gaeltacht schools and lowest in gaelscoileanna (see Figure 5.1). Single-sex schools were somewhat more likely to have computers in the classroom than coeducational schools. The analyses went further by examining whether access to computers varied by the classroom setting. Children in multi-grade classes were more likely to have a computer in their classroom than those in single-grade classes. Those being taught by male teachers were somewhat more likely to have access to a computer within the classroom. This pattern was mainly due to the differential distribution of male teachers across single-sex and coeducational schools; however, there was a difference between male and female teachers in boys' schools, with 92% of male teachers having computers in the classroom compared with 80% of their female counterparts.

Figure 5.2:   Access to the Internet in the Classroom by School and Teacher Characteristics
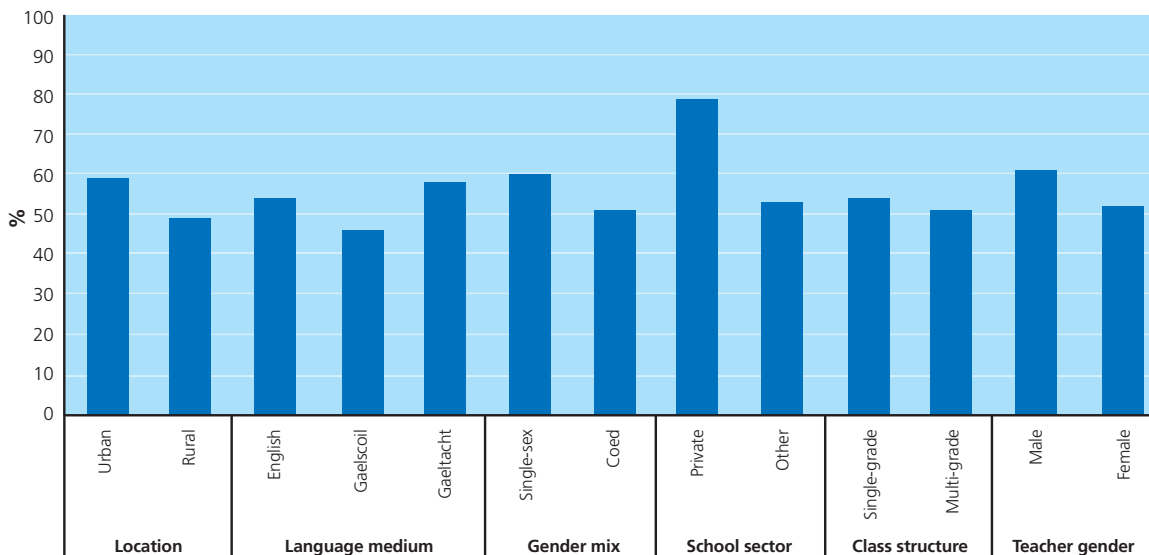
The way in which computers are used for learning in class is likely to be strongly shaped by access to the Internet. Variation in Internet access was evident across different kinds of school. Those attending urban schools were more likely to have access to the Internet than those in rural schools, most likely reflecting more general geographical variation in broadband penetration (Figure 5.2). There was no variation by disadvantaged status in access to the Internet in the classroom. As with computer access, the highest level of Internet access was found in Gaeltacht schools and the lowest level in gaelscoileanna. Children attending private schools were much more likely to have access to the Internet in the classroom than those in other schools (79% compared with 53%). Access to the Internet was somewhat less in small schools (<100 pupils), a pattern which was confined to urban schools. Some variation in Internet access was also evident across different kinds of classrooms. While they were more likely to have a computer in their classroom, children in multi-grade classes were somewhat less likely to have access to the Internet. This pattern differed across urban and rural areas; in rural areas, children in multi-grade classes were more likely to have Internet access (52% v 46%) while the reverse was true in urban areas (47% v 60%). Those being taught by male teachers were somewhat more likely to have access to the Internet in the classroom; this gender difference was most apparent in coeducational schools.

Access to computers does not of course determine their level of usage and their integration into day-to-day learning. Information was collected from classroom teachers on the frequency of ICT usage. Reflecting the differences in ICT resources, children in Gaeltacht schools used computers in class more frequently than others, with the lowest level of usage found among children in gaelscoileanna. Children in private schools also used computers more frequently in class than those in other schools. Computer use was somewhat less frequent in larger classes than in smaller ones, most likely reflecting logistical constraints on having a large group of children work on a small number of computers. Children in non-disadvantaged schools were more likely to be in classes where computers were used 'never' or 'once a month or less' than those in DEIS schools. Once again, some variation in use was evident at the class level. Use of the computer was more variable in multi-grade than single-grade classes, with these teachers being more likely to use ICT rarely/never or very frequently. Computer use was more frequent when pupils were taught by a male teacher and in urban schools.

In summary, the majority of nine-year-olds had access to a computer in their classroom; access was higher among those in single-sex and Gaeltacht schools, and among those being taught in multi-grade settings or by a male teacher. Over half (57%) of nine-year-olds had Internet access in their classroom, with this being more common for children in urban areas and those attending private or Gaeltacht schools. The use of ICT in classroom learning was greater in private, designated disadvantaged and Gaeltacht schools, and in urban areas.

5.2.2   READING AT HOME AND SCHOOL

Literacy skills are generally developed in the school context initially but can be reinforced by reading outside school, either with parents or independently. Children in the study were asked about the extent to which they liked reading at school; 60% 'always like it', 36% 'sometimes like it' while 4% 'never like it'. Attitudes to reading did not vary by type of school – that is, whether the school was designated disadvantaged or private or by the language medium of the school. Across the whole population, girls had more positive attitudes to reading than boys (with 64% of girls 'always' liking it compared with 53% of boys), in keeping with previous research in Ireland and elsewhere (see Cosgrove and Morgan, 2000). This gender gap was larger in the single-sex sector than in coeducational schools. Attitudes to reading did not vary by class characteristics, including teacher gender and whether the class was multi-grade.

More variation was apparent in the extent to which children read 'for fun (not for school)'. Three-quarters of nine-year-olds read for pleasure at least a few times a week, with a third of the sample reading 'every day'. One in 10 read on a weekly basis while 13% read less often than weekly. Reading for pleasure varied by the social mix of the school; 35% of those in non-disadvantaged schools read every day compared with 27% of those in the most deprived (band 1) urban schools. Frequency of reading for pleasure was somewhat higher in gaelscoileanna than in English-medium schools, with the level in Gaeltacht schools falling between the two. There were clear gender differences in the frequency of reading for fun, with girls more likely to read on a daily basis (37% compared with 25% of boys); this gender difference was apparent across both the single-sex and coeducational sectors.

Not surprisingly, liking reading at school was closely related to the frequency of reading outside school; 43% of children who 'always' liked reading at school read at home on a daily basis compared with 21% of those who 'sometimes' liked reading and 12% of those who 'never' liked it. Even controlling for attitudes to reading at school, girls were more likely to read at home frequently than boys. Boys who 'never' liked reading were particularly unlikely to read outside schools, with over a quarter (28%) of this group 'never' reading for pleasure. This is not to imply a causal relationship, since attitudes to reading at school and at home are likely to reinforce each other as children move through the school system. However, social background and gender differences in reading engagement outside school are likely to contribute, at least in part, to achievement gaps in the longer term.

Nine-year-olds were also asked about the extent to which they 'read something together' with their parents; almost half (47%) reported doing so in the last week. Children who read with their parents tended to report a somewhat higher frequency of reading for pleasure; 76% of those who read with their parents read for fun at least a few times a week compared with 67% of those who did not read with their parents. This difference was greater for boys than for girls. There were no systematic differences across school or classroom types in the extent to which children reported reading with their parents.

5.2.3   CULTURAL ACTIVITIES AT HOME AND SCHOOL

International research has shown that children from middle-class families are more likely to engage in cultural activities outside school (see Chapter 1) but little is known about whether such involvement is associated with the school context. Over half (53%) of nine-year-olds were involved in cultural activities (such as music or drama) outside school; as shown in Chapter 3, such involvement was found to be much more prevalent among girls than boys (70% compared with 36%). Such participation was less common among those attending disadvantaged schools (36% for those in urban band 1 schools, 56% for non-disadvantaged schools). Involvement in cultural activities was also greater in gaelscoileanna and Gaeltacht schools than in English medium-schools (65%, 62% and 52% respectively).

School principals were asked about the relative importance of different curricular and extracurricular activities in their school. The vast majority of nine-year-olds were attending schools where sports/PE was seen as very important both within the curriculum and as an extracurricular activity (Figure 5.3). Music and speech/drama were ascribed somewhat less importance as curricular activities, but the main gap between these domains and sports/PE occurred in relation to extracurricular activities. Children attending schools where music or speech/drama were seen as a very important curricular or extracurricular activity were more likely to be involved in after-school cultural activities.

Figure 5.3:   **Proportion of 'Very Important' Curricular and Extracurricular Activities, as Reported by Primary School Principals**
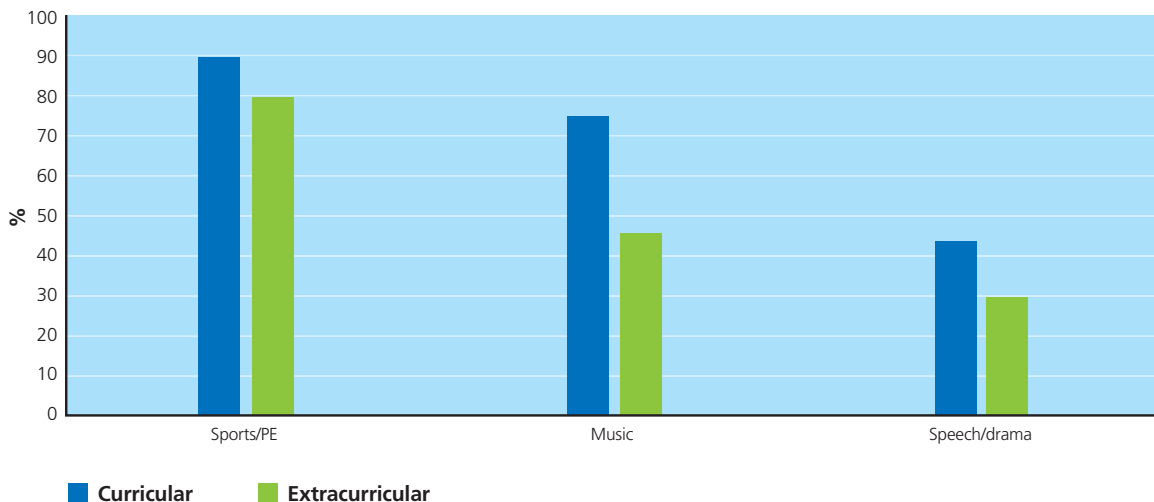
5.2.4   SCHOOL CHARACTERISTICS AND OUT-OF-SCHOOL ACTIVITIES

Analyses explored the relationship between school characteristics and children's out-of-school activities at a descriptive level. Some differences in out-of-school activities were evident by school social mix. Children attending non-disadvantaged or rural DEIS schools were more likely to fall into the cultural activities group than those attending disadvantaged urban schools; the proportion falling into this group was particularly low in the most deprived (urban band 1) schools. This 'cultural activities' group were more involved in both solitary cultural pursuits (especially reading) and structured cultural activities (e.g. music or drama lessons). Children in urban band 1 schools were more likely to be 'social networkers' while children in rural DEIS schools were least likely to fit into this category. Later in this chapter, we will explore whether these patterns are related to the profile of students attending the different schools or to the effect of social mix over and above individual social background.

Variation was also evident by the language medium of the school. Children attending gaelscoileanna or Gaeltacht schools were more likely to have high participation in cultural activities than those attending English-medium schools. Proportions in the social networker group were lower in the Gaeltacht schools than in other school types. Pupils in girls' schools were more likely to be social networkers than those in coeducational or boys' schools, but this pattern was confined to urban areas. Involvement in sports activities was higher in boys' schools and lowest in girls' schools (30% compared with 13% in this group). Pupils in boys' schools had lower levels of involvement in cultural activities (12% compared with 23-24% in mixed and girls' schools). However, this was due to the gendered nature of involvement in cultural activities, not to school sector *per se*. There was no significant difference between boys attending single-sex and those attending coeducational schools in such involvement. However, girls in coeducational schools engaged more in cultural activities than those in girls' schools, while the reverse was the case for social networking.

Some variation was apparent across different kinds of classroom settings. Pupils with a male teacher were more likely to be involved in sports activities and less likely to be involved in cultural activities. This was mostly related to the gender mix of the school rather than teacher gender *per se*. However, those in boys' schools who had male teachers had a somewhat lower level of involvement in cultural activities than those with female teachers (10% v 13%). Children attending multi-grade classes were less likely to be social networkers (10% v 20% for those in single-grade classes) and somewhat more likely be involved in sports (25% v 20%). Interestingly, this pattern applied in both urban and rural areas. In keeping with this pattern, social networkers were less prevalent in small schools (<100 pupils), a pattern which was confined to rural areas.

There were few differences in out-of-school activities by whether pupils had a computer in their classroom. Similarly, there was little association between post-school activities and frequency of use of ICT in class, as reported by the teacher. However, having access to the Internet in the classroom was associated with a greater proportion of social networkers and somewhat less involvement in mixed or cultural activities. Attitudes to school-based reading were not strongly associated with type of out-of-school activities. The only exception was much lower involvement in cultural activities among those who 'never' like reading. Children attending schools where music and/or speech/drama were seen as more important were somewhat more involved in cultural activities outside school.

Many aspects of school policy and practice are interrelated. In the following section, we explore the relationship between school characteristics and out-of-school activities, identifying the most significant factors.

5.3 MULTILEVEL ANALYSIS

Table 5.1: **Multilevel Multinomial Logistic Regression Model of School and Classroom Factors and Cluster Membership (3-level model), Compared to Base Category 'TV/sports'**

	Social networkers	Sports and computer games	Cultural activities	Busy lives
Constant	-0.434	-0.680	0.343	-0.493
Male	-0.271***	0.790***	-0.766***	0.069
School factors				
Urban location	0.510***	-0.001	0.072	0.275***
Social mix:				
DEIS urban band 1	-0.410**	-0.314*	-1.302***	-0.702***
DEIS urban band 2	-0.173	-0.105	-0.446***	-0.513***
Rural DEIS	-0.414	-0.210	-0.400*	-0.530
(Base: Non-disadvantaged)				
Language medium:				
Gaelscoil	-0.043	-0.142	0.287*	-0.041
Gaeltacht	-0.038	-0.212	0.269	-0.511
(Base: English medium)				
Single-sex school	0.148	0.069	-0.072	0.098
Single-sex school* male	-0.129	-0.048	-0.073	-0.129
Classroom factors				
PC(s) in classroom	-0.050	0.019	0.218**	0.098
Internet access in classroom	0.313***	0.151*	0.015	-0.031
Multi-grade class	-0.388***	0.153*	-0.018	-0.122
Male teacher	0.262**	0.156±	0.028	0.116
Teacher experience:				
11-20 years	0.106	-0.143	-0.110	0.014
21-30 years	0.114	-0.045	0.008	-0.165±
>30 years	-0.212*	-0.228*	-0.114	-0.202±

Note: *** p<.001; ** p<.01; * p<.05; ± p<.10

Table 5.2: Multilevel Multinomial Logistic Regression Model of School and Classroom Factors and Cluster Membership, Controlling for Individual Social Background (3-level model)

	Social networkers	Sports and computer games	Cultural activities	Busy lives
Constant	-1.410	-1.513	-1.693	-1.622
Male	-0.289**	0.854***	-0.785***	0.138
School factors				
Urban location	0.364***	-0.008	0.005	0.275**
Social mix:				
DEIS urban band 1	0.605**	0.362*	-0.016	0.283
DEIS urban band 2	0.297	0.186	0.138	0.092
Rural DEIS	0.096	0.101	0.151	-0.022
(Base: Non-disadvantaged)				
Language medium:				
Gaelscoil	0.634***	0.566***	0.884***	0.679***
Gaeltacht	-0.189	-0.449	0.179	-0.712
(Base: English medium)				
Single-sex school	-0.366***	-0.542***	-0.701***	-0.460***
Single-sex school* male	0.386*	0.516**	0.647***	0.464***
Classroom factors				
PC(s) in classroom	-0.033	-0.052	0.165*	0.031
Internet access in classroom	0.234**	0.094	-0.071	-0.112
Multi-grade class	-0.447***	0.061	-0.076	-0.197*
Male teacher	0.121	-0.021	-0.112	-0.116
Teacher experience:				
11-20 years	0.163	0.056	-0.003	0.056
21-30 years	0.116	-0.167	0.030	-0.203*
>30 years	-0.037	-0.158	0.048	-0.052

Note: *** p<.001; ** p<.01; * p<.05; ± p<.10. Controls are included for social class, family income, family structure, mother's education, immigrant status, learning disability and chronic illness.

The analysis in the previous section yields insights into variations among different groups of children but does not allow us to assess whether school factors have any relationship with children's out-of-school activities, once we take account of variation in the kinds of children who attend different schools. To disentangle the net influence of school characteristics, we used a series of multilevel models, which take account of the fact that nine-year-olds in our sample were clustered within classrooms (teachers) which in turn were clustered within schools (see Chapter 2). Table 5.1 looks at the relationship of cluster membership with school and classroom factors without controlling for pupil background (with the exception of a control for gender). Table 5.2 examines the relationship between out-of-school activities and school and classroom factors, taking account of the same social background factors that were considered in Chapters 3 and 4. (The social background effects are the same as those described in Chapter 3, so these coefficients are not presented again here.)

In keeping with the analysis presented in section 5.2.4, children attending schools in urban areas were more likely to be in the 'social networker' or 'busy lives' groups than in other groups. This urban-rural difference did not reflect differences in social profile between the two areas since the effects were apparent even in Table 5.2. We had hypothesised that children attending working-class schools would have lower levels of participation in structured, particularly cultural, activities. Table 5.1 shows that children attending the most deprived (urban band 1) schools were more likely to fall into the TV/sports group than any other cluster of activities. Taking account of the fact that children attending these schools tended to come from lower-income and less highly educated families changes the picture somewhat. The low participation of these children in cultural activities was found to be due to their social background rather than the effect of school social mix; this was also true for urban band 2 and rural DEIS schools. This is contrary to our initial hypothesis and appears to indicate that 'concerted cultivation' reflects the *individual* social backgrounds of students but not the social mix found in a school. Controlling for individual background, children in the most deprived schools were found to be somewhat more involved in social networking and sports/computer games than might be expected given their background. It may be that additional activities provided in these schools through the DEIS and School Completion Programmes encourage participation in post-school sports and other social activities.

We had hypothesised that children attending gaelscoileanna would be more engaged in structured, particularly cultural, activities. On first glance, children attending gaelscoileanna do not differ significantly from those attending other schools, with the exception of higher participation in cultural activities (Table 5.1). Taking account of social background, however, changes the picture, with gaelscoil children more involved in all activities except TV/sports, especially cultural activities and social networking. Our hypothesis regarding cultural activities is therefore confirmed. The relationship with social networking is perhaps somewhat surprising; it may be that the patchy geographic provision of gaelscoileanna means that children travel outside their local area to attend school and therefore need to make more effort to keep in touch with their classmates through electronic means. The fact that the pattern in gaelscoileanna was quite different from that found in Gaeltacht schools means that the difference cannot be attributed to school language medium per se. Rather, it appears to reflect the differences in the motivations, and perhaps social networks, of parents who choose to send their child to a gaelscoil, and these differences are not reducible to social class, education or income variation.

No raw difference was found between single-sex and coeducational schools in the types of out-of-school activities. Taking account of social background differences between the two sectors, we found that the picture changes somewhat. Boys' involvement did not differ between coeducational and single-sex schools, all else being equal. However, for girls, attending a single-sex school was associated with somewhat lower involvement in all activities, relative to spending time on TV/sports. Further analysis is needed to explore possible reasons underlying this pattern, since it does not support our initial hypothesis of greater gendering of activities in single-sex schools.

Having a computer in the classroom was associated with higher involvement in cultural activities, while having Internet access in the classroom was associated with greater involvement in social networking (Table 5.2). Children being taught in multi-grade classes were less involved in social networking, all else being equal. Any variation by teacher gender or teacher experience was found to be due to the social profile of children, since these effects were no longer significant in Table 5.2. There was no evidence, therefore, that teacher gender promoted greater gendering of out-of-school activities, as we had originally hypothesised.

5.4   CONCLUSIONS

This chapter has explored the relationship between learning experiences in school and children's out-of-school activities. Nine-year-olds were broadly positive about reading in school, with 60% 'always' liking it, and three-quarters reading for pleasure outside school least a few times a week. Even at the age of nine, strong gender differences were evident in the frequency of reading outside school; boys were less likely to read for pleasure, especially where they were negative about school-based reading. Over half of the children took part in cultural classes or clubs outside school; again, the rates of participation were much higher among girls than boys. Children in the 'cultural activities' group combined greater involvement in organised cultural activities with more frequent reading for pleasure. Falling into this group was much more common among children attending non-disadvantaged schools, but this was due to the individual social background of the children in these schools rather than the social mix of the school *per se*. A distinctive profile of recreation was evident among children attending gaelscoileanna, who were least likely to fall into the TV/sports group and most likely to fall into the cultural activities group, compared to those attending English-medium or Gaeltacht schools. This profile was evident even when a range of family background characteristics was taken into account.

The majority of nine-year-olds had access to a computer in their classroom, but Internet access was more variable and over a fifth of children 'never or almost never' used computer facilities as part of day-to-day learning. Variation was evident in ICT usage for learning; it was more prevalent at both ends of the social spectrum – that is, in private and designated disadvantaged schools. Usage was also more common in Gaeltacht and urban schools, in keeping with differential access to the Internet. Chapter 3 indicated that ICT usage outside school was an important dimension of differentiation in children's recreation. Children who had Internet access in school were more likely to be social networkers or fall into the sports/computer games category, relative to the low ICT usage, TV/sports group. Having a male teacher was also associated with falling into these groups, while having a more experienced teacher (one teaching for more than 30 years) was associated with less likelihood of falling into these groups.

In sum, there was some evidence that children's engagement in out-of-school activities was related to the characteristics of the school they attended. If these activities influence educational outcomes, then participation may reinforce (or indeed counter) pre-existing differences in academic achievement. The following chapter addresses these issues by examining the relationship between out-of-school activities and educational performance in reading and mathematics.

Chapter 6

OUT-OF-SCHOOL ACTIVITIES AND ACADEMIC ACHIEVEMENT
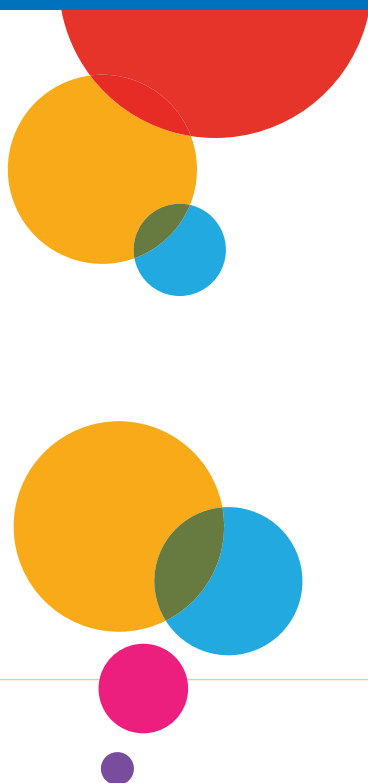
6.1   INTRODUCTION

In this chapter, we examine the relationship between participation in out-of-school activities and children's academic achievement, measured by their performance in the Drumcondra reading and mathematics tests. Because we are using one wave of data, it is necessary to be cautious about inferring a causal relationship. It may be that children who were doing better academically were more likely to participate in certain clusters of activities outside school. However, looking at the relationship between informal learning and formal learning is a way of identifying the possible existence of 'concerted cultivation' among children in Ireland. Furthermore, even if those taking part in certain out-of-school activities were 'positively selected' (having higher literacy scores or school engagement in the first place), such participation may have further reinforced their educational advantage relative to other children.

6.2   READING PERFORMANCE

Tables 6.1 and 6.2 show multilevel models of the relationship between out-of-school activities and test scores in reading and mathematics, respectively, controlling for a range of social background characteristics. Both sets of scores are scaled to have an average score of 100 with a standard deviation of 15, thus facilitating the comparison of the relative size of relationships. Turning first to reading performance, model 1 shows the extent to which reading scores varied across schools and teachers. It indicates that 10% of the variation in reading scores was between schools, 10% was between teachers/classes and the remaining 80% was between individual nine-year-olds. In model 2, we add in cluster membership, that is, the group of activities in which children engage. We know from Chapter 3 that these groups differ in other characteristics, such as social background, which are likely to influence performance, but this model gives us a baseline of the 'raw' difference between groups. The first set of columns in Figure 6.1 depicts these raw differences, using 'TV/sports' as the base category (that is, as set to zero). The highest reading scores were found among those involved in cultural activities and the social networkers, while those involved in TV/sports had lower reading scores than all four other groups. The scale of these raw differences is quite significant; the 'social networker' and 'cultural activities' groups have reading scores a third of a standard deviation higher than those in the TV/sports group.

In Model 3, Table 6.1, we control for gender, social background and whether the child has a disability or chronic illness. The effects of social background characteristics are consistent with previous international and Irish research. Children from professional or managerial families, from high-income families, whose mothers had higher levels of education and who had access to more educational resources (books) in the home achieved higher reading test scores. Children from immigrant families achieved lower reading scores while there was no significant difference between one-parent and two-parent families, once other socio-economic factors were taken into account. There was a large achievement gap of more than a standard deviation for children with learning disabilities; the effect for chronic illness or disability was much smaller in scale but still significant. There was a change in the relationship between cluster membership and reading performance when we controlled for social background (see second set of columns in Figure 6.1). The 'social networkers' and 'cultural activities' group still achieved the highest reading scores but the gap between them and other categories had narrowed to under a fifth of a standard deviation. In other words, some of the apparent advantage of these groups was due to the fact that children from more privileged families were more likely to engage in cultural activities and social networking (see Chapter 3). However, the differences were still substantive, in the same order of magnitude as having a mother with post-secondary education. The gap in reading scores between the 'sports/computer games' and 'TV/sports' groups was also reduced in scale when family background was taken into account. Taking account of social background, the 'busy' group was found to no longer differ from the 'TV/sports' group in reading score.

Figure 6.1: **Differences in Reading Test Scores by Clusters of Out-of-School Activities Compared with the 'TV/sports' Group (Derived from Multilevel Models in Table 6.1)**
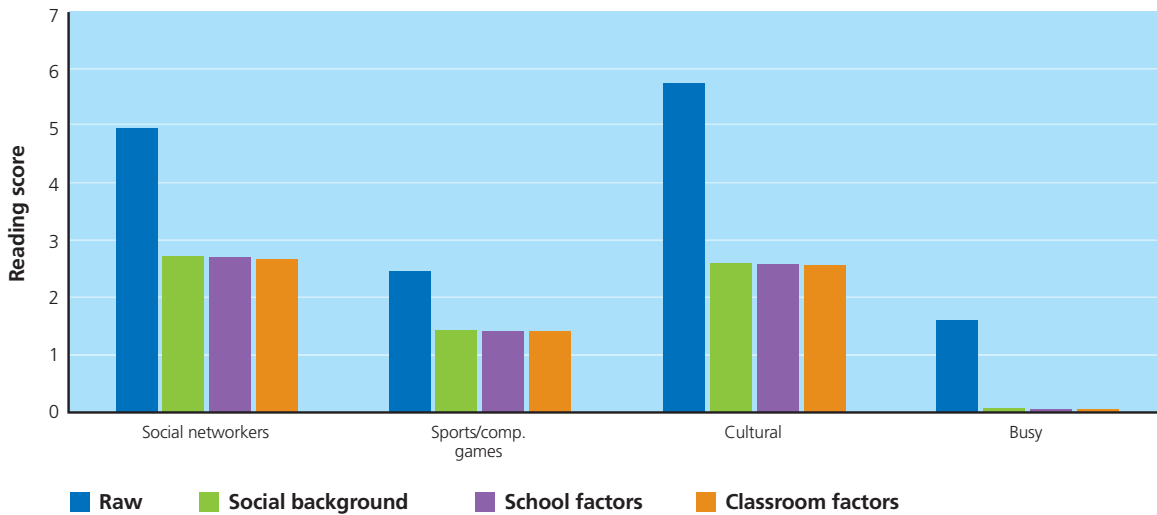
Model 3 (Table 6.1) takes account of school factors. Reading performance did not vary by the language medium of the school, its gender mix or its urban/rural location, controlling for pupil characteristics. In keeping with previous research (McCoy *et al*, 2010), children attending urban DEIS schools achieved lower reading scores than children in other school types; the largest achievement gap was found for those attending the most deprived schools (urban band 1). Looking at the third set of columns in Figure 6.1, we see little change in the relationship between activities groups and reading score. Model 4 (Table 6.1) takes account of classroom factors. Having a computer in the classroom was not significantly related to reading score but those who had access to the Internet in their classroom achieved higher scores (by about a tenth of a standard deviation) than other pupils. Children being taught by teachers with more than twenty years' experience also achieved higher scores, by around a tenth of a standard deviation. Even taking account of classroom factors, the 'cultural activities' and 'social networker' groups achieved the highest scores, while the 'sports' group also achieved higher scores than the 'TV/sports' or 'busy' groups.

The finding of higher reading performance among those involved in structured cultural activities is consistent with our initial hypothesis. Many international studies have found that unstructured activities do not enhance educational performance in the same way as structured activities (see Chapter 2). Our analyses indicate a more complex pattern, however, relating to the kinds of structured and unstructured activities engaged in. The TV/sports group seem to resemble most closely the profile of children engaged in unstructured activities previously presented in the literature, and they are found to have the lowest reading scores of any of the groups studied here. The higher reading performance found among the social networking group is perhaps difficult to explain, given our initial hypothesis. However, this group may be reinforcing their literacy and other skills through their use of ICT to keep in touch with their friends, and their contact with friends in conjunction with some involvement in cultural activities appears to act as a form of cultural capital in the school setting. Thus, the kinds of unstructured activities engaged in appear to make some difference to schooling outcomes. The achievement gap for the 'sports/computer games' group, while smaller than that for the social networker and cultural groups, is also difficult to explain. International research has indicated some benefits from sports participation for academic achievement. However, the level of sports involvement for the 'sports/computer games' group is on a par with that for the 'TV/sports' group, so the pattern does not appear to relate to involvement in sports as such. What distinguishes these groups is the greater use of ICT for fun and for learning among the former group. Thus, ICT usage is associated with higher reading achievement, at least in certain contexts. Children with 'busy lives' appear to have some elements of the 'hurried child' described by Elkind (2006); their over-involvement in a range of out-of-school activities appears to cancel out the learning benefits of taking part in such cultural activities and the use of ICT.

Table 6.1: Multilevel Regression Model of the Relationship between Clusters of Out-of-School Activities and Reading Performance (3 levels)

	Model 1	Model 2	Model 3	Model 4	Model 5
Fixed part					
Constant	99.479	96.479	89.496	89.904	88.547
Clusters:					
Social networkers		4.949***	2.734***	2.742***	2.682***
Sports/computer games		2.468***	1.436***	1.439**	1.418**
Cultural activities		5.744***	2.622***	2.595***	2.593***
Busy lives		1.631**	0.074	0.039	0.069
(Base: TV/sports)					
Male			0.597±	0.697*	0.704±
Social class:					
Professional			3.266***	3.183***	3.168***
Managerial			1.840**	1.764**	1.738**
Non-manual			0.720	0.702	0.693
Skilled manual			-0.961	-1.023	-1.034
Economically inactive			-0.010	0.035	0.085
(Base: Semi/unskilled manual)					
Family income quintile:					
2nd lowest			0.655	0.594	0.633
Middle			0.926±	0.820	0.875
2nd highest			1.890***	1.761***	1.805***
Highest			1.832***	1.674***	1.697***
(Base: Lowest quintile)					
One-parent family			0.057	0.133	0.101
Mother's education:					
Upper secondary			2.041***	1.864***	1.844***
Non-tertiary			2.216***	2.036***	2.047***
Primary degree			4.709***	4.529***	4.512***
Post-graduate			6.239***	6.022***	6.010***
(Base: Lower secondary or less)					
Books in the home:					
10-20			2.643***	2.564***	2.566***
20-30			4.032***	3.897***	3.917***
30+			7.080***	6.946***	6.979***
(Base: <10 books)					
Immigrant family			-3.180***	-3.154***	-3.157***
Learning disability			-16.549***	-16.558***	-16.559***
Chronic illness/disability			-1.278**	-1.265**	-1.244**
School characteristics					
Urban				0.648	0.591
DEIS status:					
Urban band 1				-4.403***	-4.195***
Urban band 2				-2.649**	-2.553**
Rural DEIS				-0.468	-0.424
(Base: non-disadvantaged)					
Language medium:					
Gaelscoil				0.151	0.585
Gaeltacht				1.412	1.089
(Base: English medium)					
Single-sex				0.867	0.809
Single-sex*male				-0.908	-0.904
Class characteristics					
Class has computer in room					-0.296
Class has access to Internet in room					1.652***
Teacher experience:					
3-5 years					0.333
6-10 years					0.830
11-20 years					0.102
21-30 years					1.502*
31+ years					1.342±
Random part					
School-level variation	22.692***	20.432***	8.167***	6.265**	6.000**
Teacher-level variation	21.362***	20.984***	23.626***	23.980***	23.628***
Pupil-level variation	181.229***	177.467***	141.897***	141.948***	141.765***
% variance explained:					
School level		10.0	64.0	72.4	73.6
Pupil level		2.1	21.7	21.7	21.8
N	8,045 pupils in 1,868 classes in 861 schools				

Note: *** p<.001; ** p<.01; * p<.05; ± p<.10

Table 6.2: Multilevel Regression Model of the Relationship between Clusters of Out-of-School Activities and Mathematics Performance (3 levels)

	Model 1	Model 2	Model 3	Model 4	Model 5
Fixed part					
Constant	99.423	96.428	89.551	89.941	87.598
Clusters:					
Social networkers		4.478***	2.642***	2.638***	2.592***
Sports/computer games		3.152***	1.801***	1.796***	1.784***
Cultural activities		4.968***	2.736***	2.713***	2.708***
Busy lives		2.565***	1.146*	1.116*	1.149*
(Base: TV/sports)					
Male			2.601***	2.532***	2.537***
Social class:					
Professional			3.539***	3.460***	3.463***
Managerial			1.995***	1.926***	1.918***
Non-manual			1.088	1.068	1.073
Skilled manual			-0.024	-0.069	-0.070
Economically inactive			0.544	0.597	0.676
(Base: Semi/unskilled manual)					
Family income quintile:					
2nd lowest			0.609	0.568	0.610
Middle			0.250	0.153	0.221
2nd highest			0.909	0.811	0.860
Highest			1.213*	1.090*	1.115*
(Base: Lowest quintile)					
One-parent family			-1.324**	-1.272*	-1.310**
Mother's education:					
Upper secondary			3.129***	2.982***	2.958***
Non-tertiary			3.253***	3.116***	3.122***
Primary degree			5.152***	5.014***	4.994***
Post-graduate			5.073***	4.916***	4.902***
(Base: Lower secondary or less)					
Books in the home:					
10-20			2.035**	1.973**	1.995**
20-30			2.793***	2.698***	2.738***
30+			4.333***	4.231***	4.289***
(Base: <10 books)					
Immigrant family			-1.060*	-1.060*	-1.045*
Learning disability			-13.526***	-13.512***	-13.528***
Chronic illness/disability			-1.518**	-1.508**	-1.498**
School characteristics					
Urban				0.642	0.620
DEIS status:					
Urban band 1				-5.083***	-4.719***
Urban band 2				-1.466	-1.276
Rural DEIS				-1.318	-1.241
(Base: non-disadvantaged)					
Language medium:					
Gaelscoil				-0.212	0.384
Gaeltacht				1.898	1.453
(Base: English medium)					
Single-sex				0.534	0.472
Single-sex*male				0.265	0.268
Class characteristics					
Class has computer in room					-0.096
Class has access to Internet in room					1.837***
Teacher experience:					
3-5 years					0.852
6-10 years					1.868**
11-20 years					0.606
21-30 years					2.344***
31+ years					2.579**
Random part					
School-level variation	28.723***	27.095***	15.353***	13.176***	12.909***
Teacher-level variation	36.266***	35.922***	36.325***	36.948***	35.951***
Pupil-level variation	163.453***	160.718***	138.457***	138.336***	138.191***
% variance explained:					
School level		1.6	46.5	54.1	55.1
Pupil level		1.7	15.3	15.4	15.5
N	8,133 pupils in 1,877 classes in 862 schools				

Note: *** p<.001; ** p<.01; * p<.05; ± p<.10

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6.3   MATHEMATICS PERFORMANCE

Table 6.2 presents a similar set of models for mathematics performance, with Figure 6.2 depicting differences between the activities group in mathematics score. Thirteen per cent of the variance in mathematics score was at the school level, 16% at the teacher level and 71% at the individual child level. Thus school and classroom factors made more of a difference to mathematics scores; this is in keeping with international research which shows that mathematics-related learning is more often confined to the school while literacy skills are developed and reinforced in the home as well as school. Figure 6.2 indicates that, as with reading scores, the highest mathematics scores were found among the cultural and social networker groups; the sports and 'busy' groups also achieved significantly higher mathematics scores than the TV/sports group. The degree of difference between groups was somewhat less in mathematics than in reading, reflecting at least in part the stronger role of school-related factors in the development of mathematics competencies.

Figure 6.2:   Differences in Mathematics Test Scores by Clusters of Out-of-School Activities Compared with the 'TV/sports' Group (Derived from Multilevel Models in Table 6.2)
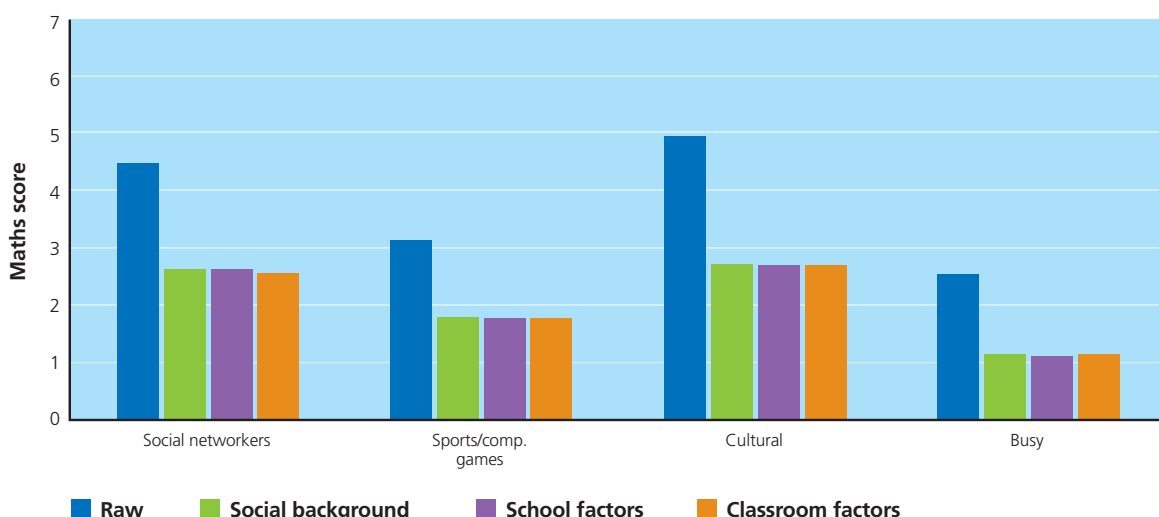
Social background influences were broadly similar to those for reading; children from professional/managerial, highly educated and high-income families with more educational resources achieved higher scores. There were some differences, however. The achievement gap for immigrant families was smaller and non-significant, while children from one-parent families achieved lower mathematics scores than those from two-parent families. Gender differences were also evident; boys achieved higher mathematics scores by almost a fifth of a standard deviation. As with reading, children with learning disabilities achieved significantly lower mathematics scores; the achievement gap was above a standard deviation. Having a chronic illness was associated with lower mathematics scores, but at a much smaller scale than the impact of a learning disability. Taking account of social background narrowed the achievement gap between children taking part in different clusters of activities, but substantive differences remained (Figure 6.2).

Mathematics scores did not vary by language medium of the school, gender mix or location, controlling for pupil characteristics. As with reading, there was a significant achievement gap between those attending urban DEIS schools and other students. Children in classes taught by more experienced teachers and where there was access to the Internet achieved higher mathematics scores, but the presence of a computer in the classroom was not associated with higher mathematics performance.

As with reading, significant differences in mathematics performance were evident by children's out-of-school activities, even when other factors were taken into account. The findings again confirm our hypothesis that involvement in cultural activities is associated with higher educational performance. As with reading, the social networker group also have an achievement advantage relative to the TV/sports group, reinforcing our finding that the kinds of unstructured activities engaged in also play a part in shaping educational outcomes. The sports/computer games group achieved higher mathematics scores than the TV/sports group, indicating the potential importance of ICT usage in academic achievement. In contrast to the finding for reading, children leading 'busy lives' had a slight performance advantage over the TV/sports group; it may be that literacy skills are 'squeezed out' by over-involvement in recreational activities because they rely more on positive reinforcement outside school than mathematical skills. In keeping with our initial hypothesis, the school plays a greater role in shaping performance in mathematics than in reading. However, contrary to our initial assumption, the achievement gains associated with participation levels in out-of-school activities were of similar magnitude for reading and mathematics, most likely reflecting the enhancement of a wide range of cognitive skills other than literacy alone.

6.4 CONCLUSIONS

This chapter has explored the relationship between children's activities outside school and their academic performance in school. A further wave of data would be required to establish causality, but using data from a single wave provides new insights into children's recreation patterns and the relationship between these activities and achievement. In keeping with previous international research on school effects (for an overview, see Teddlie and Reynolds, 2000), significant achievement differences were evident between schools and among teachers within schools, even taking account of social background and gender. Achievement was strongly structured by several dimensions of family background, including social class, parental education, household income and educational resources, again in keeping with previous international research.

The analyses presented in this chapter allow us to explore the relationship between out-of-school activities and achievement, net of differences in the kinds of children who engage in different clusters of activities. Two groups of children were found to have substantively higher reading and mathematics scores, by almost a third of a standard deviation. First, children who engaged in organised cultural activities and in frequent reading for pleasure had a significant achievement advantage over those who could be regarded as having a 'traditional' childhood, that is, one centring on television, sports and hanging around with friends, and involving little engagement with ICT outside school. For these children, the 'cultural capital' acquired outside school facilitated higher achievement, in keeping with Lareau's theory of 'concerted cultivation'. Secondly, an achievement advantage was evident too for the social networker group, comprising the only children in the sample who used ICT as a means of social interaction, even though they had frequent face-to-face contact with their friends outside school. This group used ICT not only for social networking but also for fun, learning and listening to music or watching films. At the same time, they read for pleasure fairly frequently. Their use of ICT, frequent contact with friends and level of reading appeared to result in forms of social and cultural capital that facilitated school performance.

A smaller but nonetheless significant gap in reading and mathematics achievement was evident between the 'sports/computer games' and 'TV/sports' groups. Given comparable levels of involvement in sports, ICT usage appeared to be the differentiating factor, though further waves of data would yield richer insights into the underlying processes. Children who led 'busy lives', combining involvement in a range of out-of-school activities, had a slight performance advantage in mathematics, but not in reading. This finding provides some support for the suggestion that the over-structuring of children's recreation cancels out the benefits of 'concerted cultivation'.

Chapter 7

CONCLUSIONS AND POLICY IMPLICATIONS
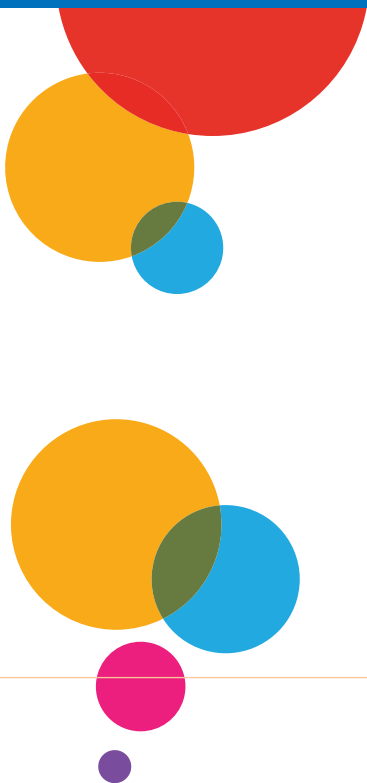
7.1   SUMMARY AND CONCLUSIONS

Children's learning occurs in formal and informal settings. However, the relationship between the two domains has been relatively underexplored and many studies have focused on the effects of a single activity (e.g. time spent watching television) on learning outcomes, with a few notable exceptions (most recently McCoy *et al*, 2011). Focusing on single activities can obscure the complexity of children's lives by looking at only one dimension of their experiences. The analysis presented in this report is innovative. First, it looks at the way in which children engage in different clusters of activities outside school, thus providing rich insights into their opportunities for informal learning. Secondly, it takes account of the ecology of children's lives, by looking at the interplay of home, school and neighbourhood.

Out-of-school activities were found to vary markedly by gender and social background. We hypothesised that girls and boys will differ in the clusters of activities they engage in, with girls more likely to participate in cultural activities and boys in sports. In line with earlier research (McCoy *et al*, 2011), the results support this hypothesis; girls engaged more in cultural activities and also in social networking while boys were more involved in sports and games. These differences in the nature of boys' and girls' out-of-school lives have important implications for their school lives as these activities seemed to vary in their role in enhancing children's academic achievement, which is discussed further below.

Children from more advantaged backgrounds (in terms of parental education, educational resources in the home, income and social class) were more engaged in structured activities, particularly the sorts of cultural activities which are likely to equip them with the kinds of knowledge and competencies ('cultural capital') that advantage them within the educational system. This is very much in keeping with our initial hypothesis that middle-class children would be more likely to participate in structured activities, especially cultural activities – the types associated with academic performance. Among the different dimensions of social background, we also hypothesised that parental education and educational resources in the home will have a stronger effect on participation, due to the 'concerted cultivation' at play; again this hypothesis is supported. Further we posited that low income will also play a role because of the paid nature of many out-of-school activities, particularly more cultural activities, and this hypothesis is supported. Children from one-parent households, from immigrant families and those with a learning disability were less likely to be involved in cultural activities than other children, which again is likely to have implications for their longer-term cognitive and educational development.

An interesting finding was the difference in the nature of urban and rural childhoods, with urban children more involved in 'busy' lives and social networking. Area-based differences go beyond the urban-rural divide. Engagement in structured cultural activities was, at least in part, a positive response to the presence of local recreational facilities, on the one hand, and, on the other, a negative response to the (perceived) lack in the local area of safe play areas and a more disorderly environment. Social networkers, a group who see their friends frequently both face-to-face and online, tended to live in areas with local parks and safe play areas. Hence the picture is largely in line with our initial hypothesis that access to a safe play area or green space in the neighbourhood will boost involvement in unstructured activities, with the corollary that children living in disorderly neighbourhoods will be more involved in structured, supervised activities. Interesting differences were also found at the school level, with a distinctive profile found among children attending gaelscoileanna. Because of these schools' emphasis on the Irish language and cultural heritage, in line with our hypothesis we found that children attending gaelscoileanna engaged more in all types of cultural activities. These cultural activities were likely to offer these children educational advantages, given their relationship with reading and mathematics performance (discussed below), and may play some role in explaining their high levels of performance in state examinations and high levels of entry to higher education (O'Connell *et al*, 2006). We also found that these children are more likely to be social networkers

which, we argue, reflects greater efforts to keep in touch with their classmates (both face-to-face and perhaps more frequently electronically) as they were more likely to travel outside their local area to attend a gaelscoil.

Children attending schools with greatest concentrations of social disadvantage (particularly Urban Band 1 DEIS schools) were initially found to be less likely to participate in the types of activities likely to reinforce their school learning, i.e. cultural activities and social networking. However, this was due to the individual social background of students attending DEIS schools; thus, contrary to our hypothesis, there was no evidence of an additional effect of the school social mix on participation in out-of-school activities. Thus, the strategies of individual families shape an emphasis on 'concerted cultivation' more strongly than does the school context. It may also be the case that the provision of extracurricular activities in DEIS schools, funded through the School Completion Programme, cancels out, to some extent, any effect of the school social mix that may have been evident in the past for disadvantaged schools.

We also hypothesised that attending a single-sex school was likely to reinforce the gendering of out-of-school activities. This was not supported and there was no evidence of the gendering of activities in single-sex settings. Further, there was also no evidence that teacher gender might promote a greater gendering of out-of-school activities.

Children involved in structured out-of-school activities, particularly cultural activities and social networking, were found to achieve higher reading and mathematics scores than those involved in unstructured activities. While a further wave of data would be required to establish causality, the achievement gap was fairly sizable and remained evident when we took account of a wide range of background factors. Essentially, structured cultural activities and social networking participation appear to offer children opportunities to both enhance their cognitive skills and reinforce their classroom learning. We hypothesised that learning experiences in the classroom may serve to prompt interest in certain out-of-school activities. Thus, having access to a computer and the Internet in the classroom may provide children with the skills and competencies to pursue an interest in ICT outside school, especially for those who do not have access to a computer at home. The results provided partial support for this hypothesis: Internet access in the classroom plays an important role in children engaging in social networking outside school, although access to a computer in the classroom does not have a significant impact on social networking outside school, but is associated with participation in cultural activities. Perhaps most importantly, such Internet access in the classroom and participation in both cultural activities and social networking are associated with academic achievement, at least in terms of reading and mathematics performance.

Finally, we hypothesised that the impact of out-of-school activities would be stronger for reading because of the greater influence of school-based factors on the development of mathematical skills (see Mortimore *et al*, 1988). However, we found that the gains associated with participation levels in different types of out-of-school activities were of similar magnitude for reading and mathematics, reflecting the enhancement of a range of cognitive skills rather than literacy alone.

Our analysis therefore suggests that the kinds of informal learning opportunities to which children have access reinforce their within-school learning. Given the social and gender differences found in participation in out-of-school activities, and the differential opportunities and focus across different school contexts, such processes may reinforce inequality in educational outcomes, especially in the longer term.

7.2   IMPLICATIONS FOR POLICY

The National Play Policy (2004) explicitly states that all children should have equality of opportunity, access, and participation in publicly funded play. This framework includes all children, including children from socio-economically disadvantaged backgrounds and neighbourhoods and children with disabilities. This policy framework is underpinned by the UN Convention on the Rights of the Child (1989), the National Children's Strategy (2000) and the Programme for Government (2002). The National Children's Strategy (2000), for example, states that "Children will have access to play, sport, recreation and cultural activities to enrich their experience of childhood" (p. 57). The report also notes that, at government level, funding for play and recreation facilities is not currently ring-fenced and competes with other budgetary priorities. While introducing ring-fenced funding is likely to be difficult in the current environment, the report also highlights the potential for greater partnership across governmental, non-governmental and voluntary organisations and initiatives in the provision of facilities and services for children. It notes that "no one organisation has the knowledge and resources to provide effective, positive activity programmes for all young people".

Greater collaboration with, and financial support for, non-governmental organisations could play an important role in developing greater and more diverse leisure and cultural facilities and infrastructure for children, particularly for those from disadvantaged backgrounds. This is particularly important given the findings of this study, in particular the finding that it is middle-class children and children who do not have a learning disability who typically engage in the kinds of out-of-school activities that are likely to facilitate their learning. Many of these cultural activities (and indeed the ICT equipment) are offered on a private basis, requiring payment, which means that not everyone has the resources to participate. It could be argued that such activities should be made available on a subsidised basis to allow children from all social groups to participate, particularly to assist parents who are currently unemployed. Research in Canada found that expenditure on subsidised quality recreation for disadvantaged groups actually paid for itself through children's lower use of healthcare and social services (Ott *et al*, 2006). They concluded that "the best outcomes can be achieved for parents and children on social assistance when society pays for quality recreation" (p. 207). While similar research has not been undertaken for Ireland, the Ott *et al* study points to a strong economic argument for investment in recreation for children. Alongside state support, community initiatives and mentor programmes can play an important role in offering such opportunities to children who are marginalised or disadvantaged or who have a disability. A growing number of evaluations suggest that mentoring programmes can positively influence a range of outcomes, including improvements in peer and parental relationships, academic achievement and self-concept (Rhodes, 2001). Community, voluntary and youth organisations offering cultural and sporting activities for children and young people should be supported. Programmes such as the Youth Arts Programme, run by the National Youth Council and Music Generation, the national Music Education Programme supported by U2 and the Ireland Funds, can potentially play an important role in enhancing and promoting learning opportunities for young people.

Financial barriers are not the only impediment to children benefiting from a diverse range of out-of-school activities and learning opportunities; awareness and choice processes, school ethos and neighbourhood factors also come into play. Again, the National Play Policy (2004) emphasises raising awareness of the importance of play and physical activity in children's lives, specifically mentioning the role of the Health Promotion Unit, liaison work with the Family Support Agency, and the dissemination of research findings about children's play. It can be argued that there is little point in providing recreation facilities and opportunities for children and young people if such facilities are not used. Research in the US found that expanding services for after-school activities with the assumption that children, particularly from families with low levels of participation in such programmes, will participate was misguided. Weitzman *et al* (2008) distinguish between unmet demand and unmet need, and point to the importance of the location of services, marketing and promoting the benefits of participation, as well as actually providing additional services. Parents are not always aware of the potential benefits of their son or daughter participating in a

range of out-of-school activities, both for the child's physical wellbeing and for supporting their formal learning. Extended periods of time engaging in solitary activities, such as watching television or playing video games, can have detrimental effects on young people's learning and cognitive development. It is important that parents be aware of this. However, not all solitary activities should be viewed in this way; it is clear that access to the Internet and computer usage more generally, for example, can play an important role in learning. Parents can be instrumental in promoting the use of technology for learning purposes and creating an environment where children and young people use new technologies to enhance their understanding of the world.

Schools also play an important role in influencing children's access to such informal learning opportunities both within and outside the school setting. During the school day, principals and teachers should encourage children's learning in the broadest sense, facilitating access to a wide range of enrichment activities for all children and moving beyond a narrow academic focus. This also means that, while literacy and numeracy are important (as emphasised in the recent Literacy and Numeracy Strategy, Department of Education and Skills, 2011), schools are also important sources of access to cultural activities, and ICT, particularly for children from disadvantaged contexts and children with with special educational needs. The strong focus in gaelscoileanna on the Irish language and cultural heritage illustrates the potential for schools to enhance children's learning opportunities through the promotion of a wide range of cultural activities. Schools should also have sufficient resources to ensure that all children have access to up-to-date ICT facilities in the classroom (including access to the Internet) and teachers should receive the ongoing training necessary to ensure that their students benefit fully from such technologies. Schools and teachers should also be encouraged to make greater use of school facilities outside school hours, through offering a range of extracurricular programmes to children and young people. These programmes may involve drama, arts and crafts, organised sports, debating clubs and homework clubs, for example. Not only does participation in these activities boost the achievement of individual students, but they also help to foster a greater sense of ownership over and attachment to school. Even a brief or introductory exposure to activities such as music or dance may prompt participation in such activities outside school. The School Completion Programme could provide a model of good practice for schools offering access to extracurricular activities. Schools could also play an important role in facilitating the greater use of school facilities and space by voluntary and community groups organising activities for children, young people and indeed adults.

Finally, the policy implications extend, beyond individual subsidies and activities offered by schools, into infrastructure. The results highlight the importance of neighbourhood characteristics – in terms of both providing opportunities for young people to participate in a range of out-of-school learning opportunities and ensuring they can do so in a safe and comfortable environment. Just over half of primary caregivers reported that there were recreational facilities appropriate to a nine-year-old in their local area. The UK Play Strategy (Play England, 2008) not only focuses on the places where children play, including parks and green spaces, schools and children's centres, but also considers how communities and neighbourhoods can become more child-friendly. Clearly, the availability of resources and services in the local neighbourhood – such as parks, libraries and community centres and recreational facilities suitable for different age groups – is central, and these need to be given adequate resources, particularly in more deprived urban areas. However, the safety of these areas should be considered in terms of both children's opportunities to participate and parents' restrictions on their outdoor activities, such as playing with friends, walking and cycling. The physical appearance of neighbourhoods is also important; levels of graffiti, litter and vandalism all tend to discourage children's physical activities and use of local amenities such as playgrounds and parks. These factors are likely to increase the time children and young people spend in more solitary and sedentary activities. This highlights the importance of ensuring that the resources are in place to ensure that *all* children have access to suitable and safe facilities in their local area.

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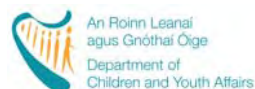
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