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Educational Experiences and Outcomes of Children with Special Educational Needs: Phase 2 – from age 9 to 13

A Secondary Analysis of Data from the Growing Up in Ireland Study

By Jude Cosgrove, Caroline McKeown
Joseph Travers, Zita Lysaght, Órla Ní Bhroin, and Peter Archer

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Foreword

The NCSE is pleased to publish findings of the second phase of a research study. We commissioned this research to find more out about the educational experiences and outcomes of students with special educational needs. The research uses data from the Growing Up in Ireland study, a government-funded longitudinal study of over 8,000 children whose progress is being tracked at different points in their lives. The first report published in 2014 examined students at nine years of age. This second report examines how students are faring at 13 years of age and their progress since they were nine.

The report details students' education progress in a number of areas, including: reading and maths test results; attitudes towards school; attendance rates; experience of being bullied; moods and feelings; and wellbeing.

It notes that some positive progress has been made in certain areas for students with special educational needs between the ages of nine and 13. While there was a small increase in average wellbeing scores for all students, this was more marked for students with special educational needs. More progress was also made between ages 9 and 13 by students with special educational needs in reading/verbal reasoning scores compared to students without special educational needs.

However, despite this progress since they were nine years of age, 13 year old students with special educational needs are still faring worse than their peers without special educational needs in a number of areas. In the area of wellbeing, students with special educational needs still had significantly lower scores overall than students without special educational needs aged 13. This reflects the relatively low base from which they started from at age 9, and the particularly low scores for 13 year old students with behavioural, emotional and social difficulties, general learning difficulties, autism spectrum disorder or multiple special educational needs. Twice as many students with special educational needs than without special educational needs at age 13 reported being bullied. Students with special educational needs also adjusted less well to post-primary school than students without special educational needs.

This report provides further insights into how students with special educational needs are faring in the education system. As such, it should be of interest to all those working to improve outcomes for students with special educational needs.

Teresa Griffin
Chief Executive Officer

March 2018

Abstract

This report is the second report from a study titled *Educational Experiences and Outcomes for Children with Special Educational Needs*. It is a secondary analysis of Ireland's national longitudinal study of children, Growing Up in Ireland (GUI), commissioned by the NCSE. The results of the first set of analyses related to when children were aged 9 were published by the NCSE in November 2014. The results examined educational, wellbeing and engagement outcomes of children with special educational needs when they were aged 9. This second report, which uses data from GUI when children were aged 9 and 13, considers the extent to which special educational needs have changed or remained the same over time; examines progress in some of the outcomes examined in the first report, along with additional outcomes, such as transition to post-primary school; and considers differences between children with special educational needs in terms of type of special needs, socio-economic, school and home contexts, and outcomes. The report includes a short literature review of these topics (in addition to the literature review in the first report), and presents the results comprehensively. First, the classification of special educational needs is described, and the SEN status of children at age 13 is compared to their status at age 9. The classification scheme distinguishes between children with behavioural, emotional and social difficulties, general learning disabilities or difficulties, speech and language/specific learning disabilities, Autistic Spectrum Disorders, physical or sensory disabilities that impact on daily life, and multiple or unclassified special educational needs. There is, in addition, a group of children who had special educational needs at age 9 but not at age 13. Second, school and home contexts of these children are described, including transition pathways and changes in home environments between ages 9 and 13. Third, a range of outcomes is examined under the general headings of engagement and attendance, wellbeing, and achievement and expected attainment. Fourth, progress in several of these outcomes is explored while taking account of a range of school, home and socio-economic characteristics. The report includes a set of conclusions and policy implications. The Executive Summary provides an overview of the key findings, and an overview of all elements of the study.

Keywords

Special educational needs (SEN); educational experiences; educational outcomes; achievement; engagement; well-being; longitudinal study.

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List of Acronyms

ANOVA	Analysis of Variance
ASD	Autistic Spectrum Disorder (including Asperger's syndrome)
ADD	Attention deficit disorder
ADHD	Attention deficit hyperactivity disorder
BAS	British Ability Scale
BESD	Behavioural, Emotional or Social Difficulties
DEIS	Delivering Equality of Opportunity in Schools
DES	Department of Education and Skills
DRT	Drumcondra Reasoning Tests
ERC	Educational Research Centre
GLDD	General Learning Disability or Difficulty
GUI	Growing Up in Ireland
HLM	Hierarchical Linear and Nonlinear Modeling
ICD	International Statistical Classification of Diseases
IPPA	Inventory of Parent and Peer Attachment
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
ISEI	International Socio-Economic Index
LD	Learning Difficulty
MFQ	Mood and Feelings Questionnaire
NA	National Assessments
NCSE	National Council for Special Education
PLC	Post-Leaving Certificate
SD	Standard Deviation
SE	Standard Error
SDQ	Strengths and Difficulties Questionnaire
SEI	Socio-Economic Index
SEN	Special Educational Need(s)
SLD	Speech and Language Difficulty
SMFQ	Short Mood and Feelings Questionnaire

Executive Summary

Background to the study

In January 2013, the NCSE issued a call for tender entitled A Secondary Analysis of Growing Up in Ireland: Data on Educational Experiences and Outcomes for Children with Special Educational Needs. In it, the NCSE noted that, despite significant investment to support children with special educational needs over the past decade, there is only limited evidence relating to the engagement, progress and outcomes of these pupils. A report published by the NCSE (Douglas *et al.*, 2012) made a number of recommendations, one of which focused on the need for further research on pupil outcomes in Ireland.

A research team in the Educational Research Centre (ERC) and the Special Education Department in St Patrick's College were tasked with this analysis in April 2013. The study was conducted in two phases, and the results of Phase 1 were published by the NCSE in November 2014 (Cosgrove *et al.*, 2014). The results of Phase 2 are presented in this report. The Phase 1 report drew on data from the Growing Up in Ireland (GUI) study when children were 9 years old (Wave 1 only), while this report, for Phase 2, uses data from when children were 9 and 13 years of age (both Waves 1 and 2 of GUI).

The aims of both phases of the study are to provide new evidence to help us understand more clearly how children with special educational needs, and specific identifiable subgroups within this cohort if possible, are faring at school in terms of:

- outcomes which relate to academic attainment or achievement and expectations in relation to same;

- participation in and engagement with school and learning, and their learning progress and expectations in relation to same; and

- independence skills, self-esteem, wellbeing at school and relationships with teachers and peers.

Two further goals are to identify and analyse the factors associated with these experiences and both formal and less formal educational outcomes, and to identify potential implications for educational policy and/or practice arising from the analysis.

The aims of Phase 2, in addition to those above, are to:

- revisit the system of classifying special needs used in the first report in light of any changes in questions asked in Wave two regarding special educational needs, special class location and other issues;

- match data between the two waves and compare children's outcomes for each wave and progress achieved (using the framework for the first phase of the study);

- track transitions to post-primary school types of the GUI children and how they have settled in to post-primary school; and

- identify the extent to which the needs of the GUI cohort have remained stable or changed between the two waves.

Due to the breadth of the findings throughout the report, the executive summary highlights the key findings of the report by area or theme, collating findings from across chapters of the report. Initially, three key areas are summarised: prevalence and stability; socio-economic status and special educational needs (SES and SEN); and home and educational background. Key findings from these themes are described under categories of an outcomes framework developed by Douglas *et al.* (2012): transition, engagement and attendance; happiness and wellbeing; and achievement and attainment.

Key findings

Prevalence and Stability: Classification of special educational needs at ages 9 and 13 years

After matching data for children at age 9 and age 13, and using parents' and teachers' responses for children at age 9, and parents' responses for children at age 13, it was found that:

- 17.9% of the 7,525 children at 13 years of age had special educational needs at the time of the survey.

- 26.9% of children had special educational needs at either or both age 9/age 13.

- 8.9% of children had special educational needs at age 9 but not at age 13.

- 6.8% of children had special educational needs at age 13 but not at age 9 (meaning that they were identified after the age of 9).

The seven specific categories arising from the GUI data are for the purpose of the report, and do not align with categories of special educational needs currently used to allocate resources to schools to support children with special educational needs in either the old or new models of resource allocation. This is because the questions asked of parents were not designed to align with either of these models. Prevalence in the seven specific categories at age 13 are in Table E1.

Table E1: Prevalence of special educational needs at age 13

Category	Overall Prevalence	Boys	Girls
BESD: Behavioural, Emotional or Social Difficulties[1]	4.1%	3.8%	4.5%
GLDD: General learning disabilities or difficulties	2.5%	2.5%	2.4%
SLDD: Specific learning difficulties or speech and language difficulties	8.0%	9.3%	6.7%
ASD: Autistic Spectrum Disorders	1.4%	2.2%	0.6%
Physical/sensory disabilities that impact on daily life	0.7%	0.7%	0.8%
Multiple or unclassified special educational needs	1.3%	1.5%	1.0%
Special educational needs at Wave 1 and 2	11.2%	13.1%	9.2%
Special educational needs at Wave 1 only	8.9%	10.3%	7.4%
Special educational needs at Wave 2 only	6.8%	6.8%	6.7%
No special educational needs at Waves 1 or 2	73.1%	69.7%	76.8%

A comparison of the SEN classification of individual children identified as having special educational needs at *both* age 9 and age 13 (11.2% of all children) shows that SEN classification changed over time, and the extent and nature of this change depends on the 'initial' classification:

- A majority of children with ASD at age 9–85% – remained classified in this group at age 13. The remaining 15% were distributed across BESD, GLDD and SLDD groups.

- Only one in three children with GLDD at age 9 remained in this group at age 13. A considerable percentage of these children – 44% – were classified in the SLDD group at age 13.

- About half of the children with BESD at age 9 were also classified in the BESD group at age 13. Just over a quarter were classified in the SLDD group at age 13, while about one in 10 were classified in the GLDD group at age 13.

- Almost three-quarters of children with SLDD at age 9 remained in this group at age 13, while about 12% were in the GLDD group, and 6% in the ASD group, at age 13.

- 44% of children with a physical or sensory disability at age 9 were also in this group at age 13. About 28% of these children were classified in the SLDD group (due in part to the inclusion of dyspraxia under the classification of physical and sensory disabilities at age 9), and 22% in the multiple or unclassified SEN group, at age 13.

- Just over half of children with multiple or unclassified SEN at age 9 were in the SLDD group at age 13. The remainder were distributed across the other SEN groups.

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[1]   In the first report of this study (Cosgrove *et al.*, 2014), which used GUI data from Wave 1 only, BESD was referred to as SEBD (social, emotional and behavioural difficulties).

The relationship between gender and categories of special educational needs varied depending on whether the child was classified as having SEN at age 9 only, at age 13 only, or at both ages 9 and 13. While about two in five of the children with special educational needs at age 9 only (40.6%) and with special educational needs at ages 9 and 13 (40.3%) were girls, about half of the children with special educational needs at age 13 only (48.7%) were girls.

Supports for children with special educational needs at ages 9 and 13 years

An examination of supports at ages 9 and 13 show that learning support and resource teaching were the most common forms of support. Focusing on children with SEN at age 9 only, resource teaching and learning supports were concentrated among children with GLDD. While about 36% of all children with SEN (at either or both ages 9 and 13) received in-school supports, this was concentrated among children with SEN at both ages 9 and 13 (68%) more so than children with SEN at age 13 only (26%) or SEN at age 9 only (2.3%). Out-of-school supports at age 13 were received by about one in six children with SEN (at either or both age 9 and 13), and again, this was higher among children with SEN at age 9 and 13 than children with SEN at either age 9 or age 13 only. It is important to note that this analysis of supports for SEN, as reported by parents, who may not be aware of all supports, cannot inform us about the suitability of supports for children.

Home and educational background

Home contexts

Examining household composition, one-parent households were more prevalent among children with special educational needs (27.3%) than children without special educational needs (16.3%), and were particularly prevalent among children with BESD (35.7%), GLDD (34.5%), and ASD (30.6%). Also, 6% of children without special educational needs experienced changes in the numbers of parents in the household, compared to 12% of children with special educational needs. Changes in household structure between ages 9 and 13 were most frequent among children with BESD.

The parents of children with special educational needs had lower average educational attainment than parents of children without special educational needs, with variation across the specific SEN groups.

About 30.7% of children with special educational needs were in families reporting financial stress, compared to 20.3% among families of children without special educational needs. Financial stress was highest among families of children with BESD, GLDD, and ASD. Also, parents of children with BESD and GLDD tended to experience a worsening of levels of financial stress from Wave 1 to Wave 2 to a greater extent than parents of children in the other SEN groups.

School contexts

The GUI sample is slightly but statistically significantly more socio-economically advantaged than the population, but nonetheless may be considered broadly representative. This is probably due to loss of participants between Waves 1 and 2 of the study. In Wave 2 when children were age 13, almost all children (98.2%) were in post-primary school; of these, 46.9% were in First Year, and 53.1% were in Second Year. About 1% of children in Wave 2 of GUI were in primary school. This is lower than the population estimate of 2.6%. A further 0.9% of children in GUI Wave 2 were enrolled in special schools. This is similar to the population estimate of 1.1%.

About twice as many children with special educational needs than without special educational needs were enrolled in schools with high levels of literacy difficulties (15.3% vs 8.4%), high levels of numeracy difficulties (15.3% vs 8.3%), and high levels of emotional and behavioural difficulties (8.0% vs 3.6%). However, prevalence of these difficulties varied more by school DEIS status than by individual child SEN.

Key findings on outcomes

Findings included here are closely related to Douglas *et al.*'s (2012) framework of outcomes: engagement and attendance (including transition); happiness and wellbeing; and achievement and attainment. Many of the findings under each theme have multiple parts: first, findings are presented in relation to children at age 13; second, for most of the outcomes (if the measure was used at both age 9 and age 13), progress from ages 9 to 13 is explored, by taking into account of 'how children were doing' at age 9; and, finally, for a group of selected outcomes, these findings are contextualised with the extent to which differences in outcomes may be associated with children's socio-economic, demographic and school and home environments, in addition to how they were doing at age 9.

For the group of selected outcomes, analyses for the contextualised findings use *multilevel modelling*, accounting for the fact that children are grouped in schools (and children in the same school share some social and educational characteristics). These models add value to the report by examining progress over time whilst at the same time adjusting for a range of background characteristics. This adjustment is important given the inter-relationships between SEN and some of the other characteristics.

It is important to note that children in primary and special schools were not included in all of the analyses due both to the small numbers of children in each of these settings when children were age 13, and the fact that school characteristics are quite different in these two settings compared to post-primary schools.

The outcomes examined included days absent from school, wellbeing (Piers-Harris scores), being bullied (parents' reports), reading test scores, and mathematics test scores.

Comparisons of four groups of children were made: children with SEN at age 9, with SEN at age 13, with SEN at both ages 9 and 13, and without SEN at either age.

Transition, engagement, attendance, and subjects studied

Transition to post-primary school

A majority of children who took part in GUI at age 13 had settled well into post-primary school (98% of children were in post-primary school at age 13), according to their parents, although more children without special educational needs (94%) than with special educational needs (80%) had settled in well. Children with special educational needs adjusted less well to post-primary school than children without special educational needs. Children with BESD, GLDD, and ASD adjusted less well than other children with special education needs.

All of the schools which 13 year olds in the GUI study attended had supports in place to assist children in their transition to post-primary, and 80% of all children were in schools with five or more kinds of transition support in place (e.g. induction day, formal integration programme, links with primary schools, study skills programme). However, none of the supports that were asked about in GUI were targeted at specific groups. This, coupled with the lower levels of positive transition to post-primary for children with SEN, may indicate a need to examine the extent to which supports targeted to the needs of children, as well as the particular aspect of the transition process, are in place.

Engagement at ages 9 and 13

At age 13, when asked how they felt about post-primary school, more children with SEN (17%) than without SEN (10%) indicated a dislike of school. Among children with special educational needs, liking of school was lowest among children with BESD, GLDD, physical or sensory disabilities that impact on daily life, and children with SEN at age 9 only.

Children were asked if they liked school at both ages 9 and 13. However, the manner in which the question was asked is not identical across waves, so results should be interpreted with some caution. In general, though, dislike of school increased between the ages of 9 and 13, but more so for children with special educational needs than without special educational needs.

Liking of school decreased among 23% of children without special educational needs and 29% of children with special educational needs between the ages of 9 and 13. Conversely, liking of school increased among 24% of children without special educational needs, and 21% of children with special educational needs, between age 9 and age 13.

Even after accounting for whether or not they liked school at age 9, liking of school in all but two of the seven SEN groups was significantly lower than children without special educational needs at age 13. Liking of school in children with ASD and with multiple or unclassified SEN did not differ from children without SEN.

Attendance at ages 9 and 13

Attendance rates over the previous 12 months at age 13 were lower among children with SEN than without SEN: 8.5% of children without SEN had missed two or more weeks of school, compared to 16.5% of children with SEN. Relatively high absence rates were found for children

with BESD, GLDD, physical or sensory disabilities, and multiple or unclassified SEN. Across all children, attendance rates at ages 9 and 13 are positively related to one another: children who had more days absent from school at age 9 tended also to have more days absent from school at age 13.

Children with SEN missed significantly more days of school than children without SEN at both age 9 and 13. The difference in days of school missed at age 13 is larger than the difference at age 9 between these two groups. This suggests a relative disimprovement in attendance of children with SEN compared to children without SEN. Even after accounting for number of days absent from school at age 9, the absence rates of each of the seven SEN groups remained significantly higher than the absence rate of children without special educational needs. Adjusted absence rates were particularly high for children with BESD and GLDD.

Findings suggest that targeting supports at individual children with low attendance coupled with robust individual-level attendance records would be more effective than school-level attendance policies on their own.

The results also highlighted the importance of positive adjustment in transitioning to post-primary school for attendance rates of children in general. For children with special educational needs at age 9 only and at both age 9 and 13, attendance rates were the same as for children without special educational needs at both stages, once account was taken of their level of adjustment to post-primary school.

The presence of socio-economic characteristics in the final multi-level analysis confirms socio-economic inequalities in children's attendance rates. The fact that these, along with children's attendance patterns at age 9, were in the final model, indicate the importance of promoting, supporting and maintaining good attendance patterns in children from early on.

Subjects studied at age 13

Of children enrolled in post-primary schools, fewer than 1% without special educational needs did not study Irish. In contrast, one in five children with special educational needs did not study Irish. This figure exceeded 40% among children with GLDD, BESD and ASD. Given the impact that the study of Irish may have on future educational opportunities, availability of a suitable course of Irish to all children with special educational needs merits consideration.

Happiness and wellbeing at ages 9 and 13

Comparisons of children's wellbeing (using Piers-Harris scores) indicated that children with SEN had significantly lower levels of wellbeing than children with no SEN, both overall and in the six areas that form the Piers-Harris measure of wellbeing. Wellbeing scores were particularly low among children with BESD, GLDD, ASD, and multiple or unclassified SEN.

Across all children, there was a small increase in mean wellbeing scores between ages 9 and 13. This increase was more marked among children with special educational needs, which is a positive finding. At ages 9 and 13, wellbeing scores were moderately positively related to one another, indicating a modest degree of stability in children's wellbeing. However, even after children's wellbeing scores at age 9 were taken into account, children in all seven SEN groups had significantly lower wellbeing scores than children with no special educational needs at age 13. Adjusted scores were particularly low among children with BESD, ASD, physical or sensory disabilities, and GLDD.

Exploring the wellbeing of 13 year olds in the context of individual, home and school characteristics, analysis (a multilevel model) showed that children's wellbeing did not vary across DEIS status (at primary or post-primary) or by post-primary school sector. However, it was also found that being bullied at age 9 has a negative association with wellbeing scores at age 13 (after accounting for other characteristics). This suggests a long-term negative impact of bullying. Second, the interaction between gender and SEN group for wellbeing of 13 year olds suggests different levels of emotional vulnerability among children in the three SEN groups, depending on whether they are boys or girls. Boys with SEN at both age 9 and 13 appear to be comparatively more vulnerable (have lower wellbeing scores than boys with SEN at age 9 only or age 13 only), while girls with special educational needs at age 9 only and age 13 only had the lowest wellbeing scores.

In addition to being asked about their wellbeing in general, children at age 13 were asked a series of questions about their mood and feelings (the Mood and Feelings Questionnaire; MFQ). Children with BESD, GLDD, ASD and multiple or unclassified SEN reported significantly and substantively lower mood than children without special educational needs.

At age 13, 10% of all children reported that they had been bullied during the past three months. Twice as many children with SEN (16%) than without SEN (8%) reported having been bullied. Experiencing bullying was most common among children with BESD, GLDD, and multiple or unclassified SEN.

Reports of bullying were compared at ages 9 and 13. However, the timeframe mentioned in the question on bullying for parents refers to the past year when aged 9, and the past three months when aged 13. About four times as many parents of children with special educational needs (11.3%) than with no special educational needs (2.7%) reported that their child had been bullied at both ages 9 and 13. However, regardless of SEN status, parents who reported that their child had been bullied at age 9 were about 2.8 times more likely to report that they had been bullied at age 13. The analyses have not examined the reasons for being bullied, or the impact, so should be interpreted quite broadly, and within the wider context of other wellbeing measures considered in this report.

Analyses using individual, home and school characteristics to explore parents' reports of the child being bullied indicated that no school-level characteristics were associated with being bullied (i.e. post-primary school sector and DEIS status, and primary school DEIS status). A lower likelihood of bullying was found for boys, Second Years, and having more close friends.

Achievement and expected attainment at ages 9 and 13

Achievement at ages 9 and 13

The verbal reasoning (VR) and numeric ability (NA) tests administered to children in GUI were not designed for children with special educational needs and more children with SEN (about 12%) than without SEN (about 4%) were missing test scores. In particular, the test score results of children with ASD, physical or sensory disabilities, and multiple or unclassified SEN should be interpreted cautiously since these three groups of children had the highest rates of missing test scores among the groups examined. It is also important to bear in mind that the analysis of test scores covers children in post-primary schools and does not include children in special schools or primary schools.

Children with SEN had mean scores on both tests that were significantly lower than those of children without SEN. However, not all children with SEN had low average test scores. Children (attending post-primary schools) with a physical or sensory disability and with multiple/ unclassified SEN had statistically the same mean scores as children without special educational needs, while children with ASD (in post-primary schools) had a mean VR score the same as children without special educational needs. Note, however, that many of the children in the GUI sample with ASD and physical or sensory disabilities were in special or primary schools and their test scores are not included in this analysis. In all other cases, children in the specific SEN groups had mean test scores that were significantly lower than those of children without SEN. Test scores were particularly low among children with GLDD.

Overall, children's reading/verbal reasoning and mathematic/numeric ability scores are quite stable, between ages 9 and 13. The reading/verbal reasoning scores of more children with special educational needs (31%) than without special educational needs (24%) showed relative increases. This is positive, since it indicates that relatively more progress was made by children with SEN than without SEN.

While good progress in the area of reading/verbal reasoning has been made among children with special educational needs in general, the amount of progress varies across SEN groups. The verbal reasoning scores of most groups of children with SEN at age 13 were at about the expected levels based on their scores at age 9. However, the verbal reasoning scores of two groups of children, children with BESD and children with GLDD, were lower than might have been expected at age 13.

In contrast to reading/verbal reasoning, while progress in mathematics has been made among some children with special educational needs, the level of progress is less than would be expected based on their test scores at age 9 among some children with SEN. There was no difference in the percentages of children with and without SEN showing relative progress in mathematics/numeric ability over time.

The numeric ability scores of some groups of children with SEN were at about the expected levels at age 13, based on their scores at age 9. However, numeric ability scores of children with SLDD and BESD at age 9 only were lower than might have been expected at age 13. Further, the mean numeric ability score of children with general learning disabilities or difficulties was significantly and moderately lower than would have been expected. Overall, less progress in mathematics than in reading has been made by children with SEN, than by children without SEN.

Verbal reasoning scores did not differ across school sector, but were significantly lower among children in DEIS post-primary schools than in non-DEIS schools. Additional analyses for verbal reasoning test scores included an interaction between gender and SEN group such that the lowest reading scores were associated with girls with special educational needs at both ages 9 and 13. This finding merits further investigation.

The final model for reading also showed that, despite having an additional year of schooling, children in Second Year had a reading score that was significantly lower than children in First Year. This could be symptomatic of disengagement among some students in Second Year, which has been shown in previous research, and is a finding that merits further study.

Over and above the other characteristics considered, children who expressed a low liking of school at age 13 were doing significantly less well in reading than children expressing medium or high levels of liking. The significant association between dislike of school and reading achievement (after accounting for the other measures in the model) suggests that further examination of why children don't like school is merited.

Similar to the analysis of reading, mathematics scores did not differ across school sector, but were significantly lower among children in DEIS post-primary schools than in non-DEIS schools. Consistent with the analysis of reading, the final analysis for mathematics showed that, despite having an additional year of schooling, children in Second Year had a mathematics score that was lower, on average, than children in First Year.

The final analysis of mathematics shows that, over and above the other characteristics considered, children who expressed a low liking of school at both 9 and 13 years of age had significantly lower mathematics scores than children expressing medium or high levels of liking. It could suggest, in the case of mathematics at least, that dislike of school can start early and have a lasting impact on school performance.

Expected attainment at ages 9 and 13

Children with SEN at age 13 reported lower educational expectations than children without SEN in some respects. For example, while 56% of children without SEN expected a degree, just 36% of children with SEN expected to attain a degree. Children's parents had higher educational expectations for their child than children themselves. Consistent with children's own reports, more parents of children without SEN (85%) than with SEN (60%) expected their child to attain a degree. However, twice as many parents of children with SEN (22%) than without SEN (11%) expected their child to attain an apprenticeship or post-school certificate or diploma.

Overall, there has been an increase in parents' educational expectations for their children between ages 9 and 13, though this increase is slightly larger among parents of children without special educational needs than with special educational needs. This suggests a slight widening of the gap in parental educational expectations among children with and without SEN over time. Analyses that compared parental educational expectations for the seven SEN groups relative to the no-SEN group confirmed that educational expectations are lower in all of these groups, with the exception of parents of children with physical or sensory disabilities.

Key findings emerging from examining outcomes in context (multilevel analysis)

In general, children with SEN are achieving at about the expected level of reading, once their achievement at age 9, along with other background characteristics, are accounted for. This is a positive finding. On the other hand, children with SEN are scoring lower in numeric ability than would be expected relative to children with no SEN, even after accounting for their mathematics achievement at age 9, along with other background characteristics. *Project Maths* has now been fully implemented. However, there has not yet been an evaluation of *Project Maths* that has included an examination of children with SEN.

Second, children with special educational needs at age 13 only may be a vulnerable group among children with SEN more generally. They were more likely than other children to have parents report that they had been bullied, and had the lowest average attendance rates (other factors being equal). Also, lower wellbeing was associated with girls with special educational needs at age 9 only and at age 13 only, and among boys with special educational needs in both age groups. This suggests that children's gender as well as the challenges and needs presented to them by their particular SEN need to be considered within any further analysis of the vulnerabilities of children with SEN.

Some key points can be made that are relevant to children in general. First, the results confirm that attitudes and behaviours that are established at age 9 are related to attitudes and behaviours at age 13. Second, there is some stability in children's wellbeing over time, and reading and mathematics scores at age 9 are quite strongly related to achievement in reading and mathematics at age 13. This underlines the need to establish and support positive attitudes and patterns of behaviour from an early age, using individualised supports where appropriate. Cognitive or academic supports may be particularly well-directed at children who had attended DEIS Band 1 schools and then enrolled in a DEIS post-primary school, while the results suggest that supports targeted at promoting children's wellbeing should be directed at children more generally. Results also suggest that further work on maintaining and improving the engagement of Second Years, and of improving children's engagement with mathematics from primary school upwards, is needed. Third, that being bullied in primary school has a bearing on children's wellbeing in post-primary school and underlines the need to identify factors that protect against the occurrence of bullying from an early stage of children's development.

Conclusions and implications

Findings in this report offer a starting point for consideration in preliminary policy formulation, though many require further research and analysis. The study is not without limitations: GUI was not designed specifically to examine children with special educational needs and the SEN classification scheme is not ideal. For example, children in the GLDD group could not be distinguished between mild, moderate and severe/profound learning disabilities; children with a range of physical or sensory disabilities are classed into a single group; and the identification of children with BESD had to be inferred from parents' responses (many children with BESD would not be formally identified). The numbers of children in some of the groups (ASD, physical or sensory disability, multiple/unclassified SEN) are small. This is particularly relevant for the children in the physical or sensory disability group, when children with physical, visually impaired/blind and hearing impaired/deaf are considered. Further research could inform policy formulation for some of these groups (e.g. BESD, severe/profound GLDD, hearing impairment/deafness).

Also, even though GUI is a very high-quality study, the sample of children at age 13 were slightly more socio-economically advantaged than the population, due to loss of participants between Waves 1 and 2. For the measures of achievement (numeric ability and verbal reasoning), response rates were lower among children with SEN (about 12% were not tested at age 13) than for children without SEN (about 4% did not complete tests at age 13), meaning that we cannot be overly confident in the generalisability of the achievement test results.

The following key implications emerge:

1. This study found that many children with BESD are at a significant disadvantage socio-economically relative to their peers without special educational needs, frequently live in home environments undergoing financial stress and compositional changes, and have poor educational, social and emotional outcomes. Moreover, a significant number of girls emerged with BESD at age 13, and it was shown that BESD frequently co-occurs with other special educational needs at age 9. Despite these findings, a majority of children identified with BESD (on the basis of the GUI data) appear not to be in receipt of educational or psychological supports (albeit that this relies on parents' reports of supports). There is a need for the development of structures and methods to enable early identification of and support for children with BESD (or at risk of BESD). This is a challenging and complex task, however, as it will require continued and enhanced collaboration and co-ordination across sectors at local, regional and national levels. In this respect, the strategies for the development of the Children's and Young People's Services Committees as part of *Better Outcomes, Brighter Futures* are welcomed.

2. The new model of allocation is welcomed (NCSE, 2014), with a fairer and more equitable system of allocation, with the inclusion of measures of socio-economic disadvantage.

3. The wellbeing of children with special educational needs is a matter for concern, particularly children with BESD, GLDD and multiple or unclassified SEN (as defined in this study). Initiatives to address these issues might be appropriate and, within these, that the needs of vulnerable children and young people could be specifically targeted.

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4. The changes over time in special educational needs underline the need for capacity in the school system to assess children's cognitive, social, personal and emotional needs in an on-going manner so as to tailor responses to meet those changing needs. Professional development and support should be on-going, and cross-sector collaboration should be maintained and enhanced.

5. There might be a need to develop targeted, tailored supports for a significant minority of children with special educational needs as they transition from primary to post-primary school. Continuity in supports should be safeguarded and the transition process should include supports for educational, social and emotional elements.

6. In some settings, subject choice and subject availability may have a negative impact on children's engagement as well as their future educational options. In particular, the availability of Irish for children with SEN who want to study it should be reviewed.

7. In attempts to address the overall wellbeing and sense of safety and belonging of children with special needs in schools, research using a standard definition of bullying is needed, and this definition should take children's views into account. The multidimensional elements of bullying and bully-perpetrator relationships should be considered.

1. Study overview and review of previous research

1.1 Chapter overview

This chapter first describes the aims of the present study, which forms the second phase of a research project that was commissioned by the NCSE. It then provides a review of previous research that is relevant to framing the analyses presented in this report. The final section of this chapter outlines the content of the remainder of the report.

1.2 Study overview

This study uses data from the Growing Up in Ireland (GUI) national longitudinal study of children. GUI is a government-sponsored study that follows the same children over time. The Department of Children and Youth Affairs (DCYA) oversees the study, which is being carried out by a consortium of researchers led by the Economic and Social Research Institute (ESRI) and Trinity College Dublin. Children were first surveyed in 2007–2008 (Wave 1), and followed up in 2011–2012 (Wave 2).[2] Two cohorts took part in the study. The infant cohort was 9 months old at Wave 1, while the child cohort was aged 9 at Wave 1. For further information on the aims and design of the GUI study, including the survey questionnaires and technical documentation, refer to www.growingup.ie.

This report is based on a secondary analysis[3] of the child cohort Wave 1 and Wave 2 data, collected when children were aged 9 and 13, respectively. Since GUI is a broad study, it was not designed specifically to allow an in-depth examination of special educational needs (SEN). For this reason, the analysis presented in this report (and, in particular, the classification of children into SEN categories) has some limitations. Nonetheless, we are of the view that with best use of the available data and transparency about these limitations, some valuable results are contained in this report. The value of this report is perhaps most evident in the comparisons of change and progress over time.

It is also important for us to examine the GUI datasets from a policy perspective since we don't have access to any other national databank on children's home and/or school lives that includes markers for disability or special educational needs. These are children who have additional needs and for whom specific policy responses might be needed.

The study was initiated in January 2013, when the NCSE issued a call for tender entitled *A Secondary Analysis of Growing Up in Ireland Data on Educational Experiences and Outcomes for Children with Special Educational Needs*. A research team in the Educational Research Centre (ERC) and the Special Education Department in St Patrick's College were tasked with this analysis in April 2013.

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[2]   In December 2015, the first results of Wave 3 of the infant cohort, when these children were aged 5 years, was published. See www.growingup.ie.

[3]   *Secondary analysis* means that the authors of this report have had no input into the content or design of the questionnaires; we are analysing data that have already been collected within the broader aims of GUI.

The aims of the study are to provide new evidence to help us understand more clearly how children with special educational needs, and specific identifiable subgroups within this cohort if possible, are faring at school in terms of:

- outcomes which relate to academic attainment or achievement and expectations in relation to same;

- participation in and engagement with school and learning, and their learning progress and expectations in relation to same; and

- independence skills, self-esteem, wellbeing at school and relationships with teachers and peers.

Two further goals were to identify and analyse the factors associated with these experiences and both formal and less formal educational outcomes, and to identify potential implications for educational policy and/or practice arising from the analysis.

In its call for tender, the NCSE noted that, despite significant investment to support children with special educational needs over the past decade, there is only limited evidence relating to the engagement, progress and outcomes of these pupils. It further noted that a report published by the NCSE (Douglas *et al.*, 2012) made a number of recommendations, one of which focused on the need for further empirical research on pupil outcomes in the Irish context. This perceived need informs the key objective of *both* phases of this study.

A report on the first phase of the study was published in November 2014 (Cosgrove, McKeown, Travers, Lysaght, Ní Bhroin, & Archer, 2014) and is available on the NCSE website.

Work on the *second* phase of the study commenced in September 2014. The aims of the second phase, in addition to those above, are to:

- revisit the classification scheme in the light of any changes in questions asked in wave two regarding SEN, special class location and other issues;

- match data between the two waves and compare children's outcomes for each wave and progress achieved (using the framework for the first phase of the study);

- track transitions to post-primary school types of the GUI children and how they have settled in to post-primary school; and

- identify the extent to which the needs of the GUI cohort have remained stable or changed between the two waves.

The outcomes in this report are grouped under the three overarching themes of *engagement and attendance*, *wellbeing*, and *achievement and expected attainment*. These themes are based on the framework developed by Douglas *et al.* (2012). Regarding wellbeing, the focus in this report is on social and emotional wellbeing rather than physical wellbeing (consistent with Douglas *et al.*).

In addition to these three themes, Douglas *et al.*'s framework includes *progress* and *independence*. This report includes an examination of progress in Chapters 5 and 6 which cuts across the three overarching themes. This approach is consistent with Douglas *et al.* (2012, p. 14), who note that "Progress implies change over time regarding educational outcomes and engagement. For this reason the research team [of the Douglas *et al.* report] did not consider progress alone, but rather in relation to outcome and engagement." However, we have not included measures of independence in the analysis. There are two reasons for this. First, a review of the content of the child and parent questionnaires indicated that GUI does not include a sufficient number of meaningful indicators of children's independence. Second, the notion of independence in Douglas *et al.*'s framework includes some reference to mobility-related independence, but pertains mainly to young adults' post-school outcomes (e.g. employment, independent living arrangements).

1.3   Overview of the GUI child cohort

Wave 1 of the GUI study collected data on 8,568 9 year olds in 2007–8. Data were collected from the children themselves, their parents, class teachers and school principals. Children completed short versions of the Drumconda Reading and Mathematics tests and a pupil questionnaire; parents completed questionnaires about themselves and their child; teachers completed questionnaires about themselves, and a second teacher-on-pupil questionnaire; and school principals completed a questionnaire about the context of the child's school.

Data collection for Wave 2 took place from August 2011 to March 2012, when the children were aged 13. Of the 8,568 children that took part in Wave 1, 7,525 participated in Wave 2. Children completed short versions of the Drumconda Verbal Reasoning and Numerical Ability tests, the British Ability Scale (BAS) Matrices test (a test of non-verbal reasoning), and a questionnaire; parents completed questionnaires; and the school principal completed a questionnaire.

Unlike Wave 1, Wave 2 did not include a teacher questionnaire or a teacher-on-pupil questionnaire. There are also some differences in the wording to questions that are analysed in the present study. These are described in the relevant sections of Chapter 5.

Rather than provide technical detail here, we refer to particular aspects of GUI study design and data where relevant in this report. For example, Chapter 3 (Section 3.2) considers the extent to which the GUI Wave 2 sample may be considered representative of the population of 13-year-olds in terms of school characteristics, while Chapter 5 (Section 5.2) examines the loss of participants across Waves 1 and 2 and considers how this may affect interpretation of the results.

1.4   Policy context

Special and inclusive education policy and provision have been directed by Circulars from the Department of Education and Skills (DES), and in recent years many of these have been informed by law. This includes the Education Act (1998) granting the right to appropriate education to all children and the Education for Persons with Special Educational Needs Act (EPSEN) (2004) granting conditional rights in relation to inclusive education in mainstream classes. Significantly,

key sections of the EPSEN Act dealing with rights to individualised planning and other areas have been deferred indefinitely. Internationally, Ireland is seen as operating a continuum of provision approach to special education including special schools and classes with a presumption in favour of inclusive education as a first option (Government of Ireland, 1993).

To date, additional teaching resources in the system have been administered through a number of channels. One is a General Allocation Model (GAM) which operates a staffing/student formula for students with higher incidence special educational or learning support needs. The second is a system of direct application for resources to the National Council for Special Education for children with lower incidence special educational needs. Also, the Special Needs Assistant (SNA) scheme to support teachers in meeting the care needs of some children with special educational needs plays a key role in supporting special and inclusive education (DES, 2014).

While the above models have provided a level of certainty and guarantee in the system for parents and schools it has come in for criticism on a number of fronts (Travers, 2010; NCSE, 2013, 2014). These include the lack of sophistication of the General Allocation Model in matching resources with needs in an equitable manner and the treating of all children within one category of disability in a homogenous manner for resource allocation. An additional issue is the individual allocation model which requires a diagnosis, which can lead to delays in waiting for assessment and is inequitable, as those that can afford to pay for private assessments do not have to wait.

As a result of this, a new model of resource allocation was proposed by the NCSE. This new model involves two components: a baseline component to all schools to support inclusion, early intervention, and prevention, and a second component based on the educational profile of the school. The educational profile is informed by three sources of data from the school, weighted in the following order (first the heaviest): the number of children with complex special educational needs; the percentage of children scoring under a certain threshold on standardised tests; and the social context of the school (NCSE, 2014). Children with complex special educational needs are defined as having enduring conditions and very significant difficulties in physical and/or sensory functioning, or in cognitive and adaptive functioning, or in social communication and interaction alongside rigid and repetitive patterns of behaviour (NCSE, 2014). The social context of the school translates to measures of educational disadvantage with greater levels of disadvantage linked to greater needs in the school. The social context element also includes provision for a gender and number of children with English as an additional language differential in relation to resource allocation. This model will be implemented in schools from September 2017.

In relation to gender, NCSE (2014) cites studies showing more boys being identified with special educational needs than girls. The Network of Experts in Social Sciences of Education and Training (NESSE, 2012) review of education and disability highlights the OECD (2007) analysis of gender differences in identification of special educational needs. The OECD review suggests it may be due to "boys' greater vulnerability to risks associated with germs, genes and trauma" (NESSE, 2012, p.28). It also highlights a school bias against boys as a possible reason. This is questioned by the NESSE review as blaming women teachers for boys' problems in school. While boys outnumber girls it is most pronounced in "non-normative categories such as learning difficulty and social, emotional and behavioural difficulties, where there are also strong associations with

social deprivation" (NESSE, 2012, p.29). In Scotland, the rate per 1,000 pupils in the emotional and behavioural category is 9.4 for boys and 2.5 for girls (NESSE, 2012). In Ireland, Banks and McCoy (2011) in an analysis of the GUI 9-year-old cohort data found that 17 per cent of those identified with special educational needs were boys and 11 per cent girls. Cosgrove *et al.* (2014) using the same data with slight differences to classification categories found likewise. Most of this difference relates to emotional and behavioural difficulties. The NCSE review group argued for including this as an element of school context for the new resource allocation model.

A structural feature of the special education system that has also drawn criticism is the division of health therapies between a number of State, voluntary and private providers across health and education (Rose *et al.*, 2015). Unlike other countries, State schools are not funded to employ health personnel and access to services can vary widely depending on geographical location. A report for Inclusion Ireland outlined seven different routes across the public and private domains for accessing speech and language therapies in the country (Inclusion Ireland *et al.*, 2014). Many of the NCSE reports call for closer collaboration and consistency between education and health professionals in services for children with special educational needs. Different legislative, policy, contractual and structural factors can militate against designing holistic social, health and educational plans and interventions for children and their families. Jones (2016) argues that unless this is mandated in a legislative framework then it is likely to continue in an unsatisfactory manner despite goodwill to make it work better. As far back as 1993, 'ubiquitous problems' of resource constraints, communication gaps, professional training differences and legal and leadership problems were identified as barriers to inter-disciplinary and inter-agency collaboration (Crowson *et al.*, 1993). The Health Service Executive's vision for disability services: Progressing Disabilities Services for Children and Young People is a step to addressing some of these issues but is taking time to implement (http://www.hse.ie/eng/services/list/4/disability/progressingservices/).

1.5 Review of previous research

This section seeks to provide an overview of existing literature and research in the area, providing a context for the main themes arising from the results in Chapters 3 to 6. The material is organised into five themes:

- Prevalence and stability in SEN categories

- Socio-economic circumstances, school context and special educational needs

- Outcomes in literacy and mathematics

- Transition to post-primary

- Emotional health and wellbeing, special educational needs and emotional and behavioural difficulties

Given the size and scope of the study, the literature review focuses on the key issues arising from the findings in relation to the research questions. Different approaches to the selection of literature were taken in the various sections depending on the theme. Some outcome themes

were linked to the Wave 1 study while the longitudinal nature of Wave 2 gave rise to new additional themes. In the sections focusing on outcomes for literacy and mathematics the literature is updated from the first report. A similar approach was taken in relation to outcomes for wellbeing and bullying.

Using key words in the Academic Search Complete database, an attempt was made to locate all studies relating to stability and change in special educational needs categories over time. In relation to the intersection of special educational needs, disability and socio-economic context, key large-scale studies were chosen to review. A similar approach was taken in regard to transition issues. Issues relating to assessing outcomes in children and young people with special educational needs and disabilities are not covered here. Instead, readers are referred to the NCSE research report on measuring outcomes for children with special educational needs (Douglas *et al.*, 2012). The following review is structured by the research questions and the issues arising in each case.

1.5.1   Prevalence and stability in special educational needs' categories

In relation to the research question on identifying the extent to which the needs of the GUI cohort have remained stable or changed between the two cohorts, the issue of prevalence estimates for students with special educational needs and change in categories over time becomes very pertinent. The use of categories of special educational needs and disability is a key area of concern in the field and they are used in the construction and analysis of this study. Norwich (2014, p.56) outlines how "categories have been used to determine underlying disorders, disabilities and impairments, patterns of exceptional child functioning, kinds of exceptional placement, kinds of curriculum design and content and teaching strategy." The rationale for the process has largely been around meeting identified needs and for additional resource allocation. There has been much criticism of the usefulness of categories in all these areas, to some extent, and of the validity and reliability of the identification and diagnostic process (Norwich, 2014). There has also been criticism of the misuse of the process leading to over-identification of children from certain ethnic groups and from low income families in specific categories of special education leading to separate provision outside of the mainstream class (*ibid*).

An OECD (2000) analysis proposes three broad categories for classification of special educational needs:

A.   Substantial normative agreement – sensory, motor, severe, profound intellectual disabilities.

B.   Difficulties not attributable to factors giving rise to categories A or C.

C.   Difficulties that arise from socio-economic, cultural and/or linguistic factors; some disadvantaged or atypical background.

There is generally more agreement where there are identifiable biological-based impairments. Dyson (2002) uses the term 'contested disabilities' to refer to category B.

A report from the Network of Experts in Social Sciences of Education and Training (NESSE, 2012) outlines that most OECD and EU countries use sub-categories of special educational needs. When categories lead to reasonable adjustments and additional resources it may be beneficial. However, categories can lead to perverse incentives to increase the rate of identification. The NESSE report also outlines that they may "be coupled with stigmatisation and social exclusion, damaging social identity and life chances" (NESSE, 2012, p.25). Norwich (2014) sees some limited usefulness of categories for teaching and learning purposes as 'orienting concepts' (p.62). He concludes that "even when categories have some educational significance, their general nature means that they inform rather than determine specific education planning and provision for individual children" (Norwich, 2014, p.68). However, in terms of tracking progress and outcomes for children with special educational needs there is merit in an administrative use of categories in databases, as used in this report (Douglas *et al.*, 2012).

A number of factors can be identified which are contributing to increases in prevalence statistics for special educational needs. Internationally, the move towards inclusive education, greater availability of assessment resources, greater access to assessment and numbers being assessed, changes in category definitions and a possible increase in environmental triggers has led to broader and more categories of special educational needs, resulting in increased prevalence estimates. Policies on inclusive and special education, resource allocation and funding models also influence prevalence estimates (Pijl, 2014).

In Ireland, using the GUI 9-year-old data set and the Education for Persons with Special Educational Needs Act (EPSEN) (Government of Ireland, 2004) definition of special educational needs, Banks and McCoy (2011) estimated a special educational needs prevalence of 25%. Using the same data but with different measures for some categories, and excluding medium risk social, emotional and behavioural difficulties (BESD)[4], Cosgrove *et al.* (2014) found an estimate of 20.6% (see Chapter 2).

Countries use very different approaches in collecting data on students with special educational needs. Some use categorical approaches, with variability in their definitions of special educational needs, and others use systems where students are identified by the resources they receive, with variability in the naming, timing, nature, duration and intensity of such measures (Pennington *et al.*, 2014). Variability will also be present in professional judgements using similar definitions of categories (Hallahan *et al.*, 2007). In systems using identification by resources there can be large variability where schools use local norms to select children for additional support (Travers, 2010, 2010a).

Banks and Mc Coy (2011), using data from the European Agency for Special and Inclusive Education (EASIE) and OECD (disability, difficulty and disadvantage categories), illustrate wide variability in country estimates of special educational needs from 1% to up to 30%. They conclude that "such differences in categorical definitions are often strongly related to administrative, financial and procedural regulations and do not necessarily reflect variations of the incidence of different types of SEN between these countries" (Banks & McCoy, 2011, p. 40).

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[4]   SEBD is termed BESD (behavioural, emotional and social difficulties) in this report, but refers to the same needs or difficulties.

Hallahan *et al.* (2007) compared interstate variability of prevalence rates for special education categories from 1984 to 2002 in the United States. They found, contrary to expectations, that high incidence categories of special educational needs were less variable than low incidence categories. In the case of learning disabilities, they argue that "these results greatly strengthen the conclusion…that using state-to-state variability of disability prevalence rates as justification of criticising learning disabilities identification practices is largely unfounded" (p.142). Using the coefficient of variation (CV) – which is the ratio of a standard deviation of a distribution to its mean and designed to compare the means of groups that are very different – they found a narrow range of CVs from .25 to .21 for learning disabilities over 19 years of data collection.

However, Hallahan *et al.* (2007) argue that identification procedures may require adaptation to local contexts and, hence, some variability can be expected in prevalence. They ask: "under the best of circumstances or the application of the best policies and practices, how much state-to-state prevalence variability would still exist in special education?" (p. 142). Using the coefficient of variation (CV) they conclude that very low figures might not be possible. This is because differences in the frequency, timing and distribution of environmental factors, professional disagreements over categorical definitions and the more socially constructed nature of some of the categories will always affect rates of diagnosis. For example, Pennington *et al.* (2014), in a study examining the definition of autism published by US state education agencies and in their evaluation procedures found considerable variability in both. As a result, Iowa has a prevalence rate of 0.1% and Minnesota 1.2%.

Forness *et al.* (2012), in a review of prevalence of students with emotional or behaviour disorder, draw a distinction between point prevalence which is a snapshot in time of students who meet the diagnostic criteria and cumulative prevalence which addresses the question of how many students might have once met the criteria over their childhood years. Cumulative prevalence is more likely to identify internalising disorders, such as depression, which can wax and wane in intensity over time (Forness *et al.*, 2012). For point prevalence they advise a figure of 12% for moderate to severe impact and 25% for cumulative prevalence as "reasonable starting points for estimating at least a *potential* need for special education" (p.5). Rates in all studies in the Forness *et al.* review were higher in secondary school. This study points towards the need to follow children who were identified as having SEN at Wave 1 only or, in a more general sense, children who have had a previous identification of SEN during childhood and currently do not have the same diagnosis, to capture the potential need for special education.

1.5.2   Change in categories over time

Related but different to prevalence estimates is the stability and movement in and out of categories of special educational needs over time. There is less data available on this issue. Some movement would be expected arising from student development, impact of interventions, changing environment contexts and policy changes on provision, diagnosis and support.

Walker *et al.* (1988) in a two-year follow-up study assessed the stability of special education students' mobility, status, and classification labels. A total of 1,184 students were selected in autumn 1982 from the elementary special education programs of three cities. Two years later,

92% remained in their school district. Of these, 71% stayed in special education with the same classification, 12% remained with a different classification, and 17% were no longer receiving special education services. The child's original primary classification was the strongest predictor of reclassification and termination. Family background contributed most to mobility.

Termination from special education services was linked with the child's initial classification. Children with a specific speech disorder were most likely to leave the services (33.1%), followed by those initially classified with a learning disability (14.9%), with an emotional or behavioural disturbance (9.1%) or with vision impairment (8.6%). Children initially classified with hearing impairment, with physical or multiple disabilities, or with a general learning disability rarely, if ever, left special education services.

Explanations of the data discussed include the level of parental satisfaction with their child's special education service as a reason for not moving. The authors also offer an alternative explanation for the socioeconomic status of the special education population in these urban sites. As many of the children came from poorer situations, and the data showed that poorer families were less likely to move, "the low mobility rates may not reflect conscious parental decisions but rather an inability to be able to afford to move" (Walker *et al.*, 1988, p.399).

1.5.2.1 Mild learning disabilities

Categorical stability of children with mild general disabilities (general and specific) is central to the present study. Wolman *et al.* (1989) report on the categorical stability of 523 students with mild learning disabilities in three high schools through a retrospective study of their school years. The categories were specific learning disability, general learning disability, emotional disturbance and speech disorder. Twenty-four per cent had at least two different classifications during their school years. The least stable was speech disorder and the most stable was general learning disability. Most of the changes occurred in the post-primary years. The emotional disturbance category and the general learning disability category proportionately received more students from other categories than the specific learning disability and speech disorder categories.

1.5.2.2 Emotional and behavioural difficulties

Categorical stability of children with emotional and behavioural difficulties is also of relevance to the present study. Identification of needs for children with emotional and behavioural difficulties was changed between Wave 1 and Wave 2 reports (see Chapter 2).

In relation to changes and stability of assessments of emotional and behavioural risk, Dever *et al.* (2015) provide the most comprehensive examination of the issues to date. They examined the two-year stability of behavioural and emotional risk screening scores. The Behavior Assessment System for Children-2 (BASC-2) Behavioral and Emotional Screening System Student self-report form (BESS Student) was used. It measures four factors: school problems, inattention/hyperactivity, internalising and personal adjustment. Scores were obtained for 863 middle and high school students at two time points. At Time 1, 13.67% were identified as at-risk and at Time 2, 11.7%. The majority of students remained in a similar risk category with gender, ethnicity, socioeconomic status, school grade, school transition and whether in special education services

not predictive of changes over the two years. In terms of change 14.25% shifted categories between Times 1 and 2 (6.14% from normal to at-risk and 8.11% from at-risk to normal). Among those who were classified as at-risk at Time 1, only 40.68% remained stable in their classification at Time 2 with the majority moving to the normal risk category.

However, "initial risk score was predictive of movement from normal to at-risk categorisation, with the internalising domain being the most predictive of change" (Dever *et al.*, 2015, p. 618). Students who shifted from normal to at-risk were significantly higher in internalising and school problems at the initial screening. This is interpreted in two different ways by the authors: first, that less visible problems precede the development of more visible risk and, secondly, that internalising problems leaves students more vulnerable to changing risk classification, as they are less likely to be identified and treated, and these problems can persist into adulthood. The findings have implications for the frequency of use of prevention focused screening for behavioural and emotional risk in schools. Kauffman (2015) argues that people tend to see the more visible externalising behaviours and children acting out, but neglect less obvious issues and internalising symptoms that "might be called precursors – little problems that have a relatively high probability of becoming bigger problems later" (p.167–168).

Also relevant to the category of social and emotional difficulties is the area of anxiety disorders. Carballo *et al.* (2010) conducted the largest international longitudinal study evaluating the diagnostic stability of anxiety disorders in young people, from preschool age through to adolescence. A sample of 1,869 was selected from 24,163 children and adolescents who were receiving psychiatric care. The following distribution shows age at initial visit: 8.8% were evaluated between 2 and 5 years; 57% between 6 and 12 years and 33.7% between 13 and 18 years. More males (55.2%) were initially diagnosed than females (44.4%) with an anxiety disorder during childhood with significantly more females (61.6%) than males (38.4%) diagnosed with an anxiety disorder during adolescence.

Looking at the stability of anxiety disorders (including several categories of anxiety disorders) using the International Classification of Diseases, Tenth Edition (ICD-10), phobic and social anxiety disorder had the highest stability, while OCD (obsessive-compulsive disorder), and 'other' anxiety disorders showed the lowest stability. There were no significant gender differences in relation to diagnostic stability. The authors conclude that "it appears that phobic, social anxiety, and stress-related disorder diagnoses in children and adolescents treated in community outpatient services may have high diagnostic stability" (Carballo *et al.*, 2010, p.395).

1.5.2.3   Autistic spectrum disorder

Studies assessing the diagnostic stability of autism spectrum disorder found that, while there is stability in the overall category of ASD, there is variability in the sub-categories in adolescents. Kocovska *et al.* (2012) followed up a 2002 population study of the prevalence of autism in 15 to 24 year olds in the Faroe Islands. The rate grew significantly from 0.56% to 0.94% in 2009, with nearly half of the new cases being female. There was diagnostic stability in the overall category of ASD over this timeframe but a lot of variability within the diagnostic sub-categories.

When different age cohorts are explored, Matson *et al.* (2010) found that, contrary to expectations, younger children would present with more symptoms of ASD, they were no more pronounced at any of the three age cohorts (children between 3 and 11, divided into three cohorts) when compared to each other, thus remaining stable and chronic. However, many children in the study had no access to early intervention which may be a reason for the decrease found in other studies in the severity of symptoms over time (for example, Shattuck *et al.*, 2007).

Daniels *et al.* (2011) assessed the diagnostic stability of initial autism spectrum disorder (ASD) in community settings. Parents of 7,106 children aged between 6 months and 18 years with an ASD diagnosis were included in the study. In line with previous studies 22% of participants had a current diagnosis that was different from their initial diagnosis. Autistic disorder was the most stable initial diagnosis with pervasive developmental disorder-not otherwise specified (PDD-NOS) the least stable. This is similar to the finding of Rondeau *et al.* (2011). In a meta-analysis they examined whether PDD-NOS was less stable than autistic disorder and concluded that when diagnosed before 36 months PDD-NOS bore a 3-year stability rate of 35%. The autism diagnostic stability was higher than PDD-NOS.

In synthesising the above findings we could expect changes in categories due to developmental, environmental and pedagogical factors. Interventions in relation to speech and language disorder, for example, can lead to children moving on from the category. Changes in categories are influenced by gender and stage of development, for example, an increase in anxiety disorders in adolescent girls. Other factors identified include parental satisfaction with services (reason not to seek change of initial diagnosis). Within the autism spectrum there is evidence of stability in the category with more variation in PDD-NOS.

1.5.3   Socio-economic circumstances, child disability and school context

Child, family and school context are key factors when investigating children's outcomes. Looking at the three research questions in this study on outcomes for engagement and attendance, wellbeing and achievement and expected attainment, the literature points to the links between socio-economic status and special educational needs as an area of concern.

The connection between socio-economic circumstances and child disability is a complex relationship with each influencing the other. The association between poverty and child disability "reflects the operation of bi-directional processes" (Emerson & Hatton, 2007, p. 563). Being raised in poverty is associated with an increased risk of impairment. Risks include being born at a significantly low birth weight, poor housing conditions, less than optimal parenting, child abuse and accidents. There are higher risks of poor health, additional disability and social exclusion arising from conditions that children with physical and cognitive disabilities are more likely to live in.

The use of large-scale surveys allows for insights into disabled childhood and to explore the difficulties faced by some families in supporting and nurturing their children. Emerson & Hatton (2007) analysed data on 7,070 family units containing 12, 916 children aged under 17. They found that:

> Families supporting a child at risk of disability were significantly more disadvantaged across a wide range of indicators of socio-economic position. The hardship experienced by these families was only partly accounted for by group differences in income, debt and savings. It is likely that the additional costs associated with caring for a disabled child account for a significant portion of the unexplained risk for increased hardship (p. 575).

Supporting a child with disabilities may entail significant direct and indirect or opportunity costs for families. These include transport, childcare, equipment and additional wear and tear on clothing and furnishings. Indirect or opportunity costs include family accommodation and reduced rate of employment among mothers of disabled children. "These additional costs are likely to have an impact on both the incidence and duration of episodes of poverty" (p. 564).

Emerson (2012) highlights the benefits of large surveys in understanding the many facets of childhood disability. He argues that "they can provide valuable insights into the ways in which the social and environment contexts of disabled childhood can compound (or redress) the disadvantage and inequality faced by disabled children" (p. 214). He cites examples of studies which have increased our understanding of the issues involved. The Longitudinal Study of Young People in England (LSYPE) began in 2004 and followed up a representative sample of 15,000 school children. It found that "disabled young people when compared with their nondisabled peers were significantly more likely to be exposed to a range of environmental adversity including household poverty, living in poor neighbourhoods and being bullied" (p. 216).

The Families and Children Study is an annual study of 7,000 British families (Emerson, 2012). While it found that families supporting a child with a disability were more likely to become poor over time and less likely to escape poverty than families without a child with a disability, this was related to the resources available to the family rather than having a child with a disability. This was because such families were more likely to have a single parent, live in poorer communities, have lower level educational qualifications and be unemployed or in low paid jobs. Controlling for these effects, "families supporting a disabled child were no more likely to become poor and no less likely to escape poverty than other families" (Emerson, 2012, p.218).

There is reason to be concerned about the association between socio-economic vulnerability and special educational needs as there is some evidence that these have widened over time. For example, in the Longitudinal Study of Australian Children "between 2001 and 2009 *the gap in social inclusion* between disabled and non-disabled young Australians widened in five areas (living in a jobless house, being fully engaged in work or education, low economic resources and financial stress, multiple disadvantage, entrenched multiple disadvantage) and narrowed in just one (being a victim of personal crime)" (p. 217).

1.5.4   School context

Lupton *et al.* (2010) examined variations in the extent of special education needs in different socio-economic contexts, drawing on data from 46 schools in one county in England. In the schools there was a strong correlation between levels of SEN and levels of deprivation. Schools were categorised from components of a school-level deprivation index compiled by the Department for Children, Schools and Families. There was a four-fold difference in identified students with special educational needs between the top and bottom schools. They also found that "there are considerable differences in SEN-related need depending on socio-economic context, but rather smaller differences in SEN-related funding" (p. 274). The authors posit that there was some evidence in support of the hypothesis that pupils with SEN in schools with high numbers of pupils with SEN may be less well served "because of the relatively low levels of resources these receive" (p. 279).

First, in schools with lower number of pupils with SEN support was more individualised and was provided for more subjects. Second, there was pressure on schools with higher number of pupils with SEN to divert resources from those with the most pressing needs to those who could make the most progress. Third, schools found it more difficult to cater adequately for children with behavioural needs and they were more common in schools with high levels of pupils with special educational needs. Fourth, such schools also had a higher number of pupils who moved between schools, such as Travellers, creating gaps in their education. Fifth, pupils with SEN were more likely to be in schools that faced "organisational challenges and resource difficulties because of falling rolls, external criticism and threats of closure" (p. 280). Recruiting and retaining experienced staff can be more difficult in these circumstances.

Lupton *et al.* conclude that "there seems a clear case for stronger connections between SEN funding and school-level disadvantage" (p. 281). They argue that "SEN must be treated as a key aspect of school context, interacting with other contexts, and that its identification and funding needs to be de-individualised and more strongly linked to broader issues of socio-economic inequalities" (p. 282).

Dyson and Gallannaugh (2008), in an analysis of the English system, argue that the disproportionate presence of students from different social groups in the special education system does not arise "principally from the misidentification of students as having disabilities. Instead, it reflects broad education and social inequalities" (p. 36). At one level they argue the disproportionality is a result of teacher and school level construction of difference as a way of coping with those perceived to be outside the norm. However, they argue that this is in itself a response to educational and social inequalities in society in general.

In combating this they note that a significant barrier is the individualised nature of the identification procedures and response. This results in disguising "the extent to which these individual problems may be linked to education and social outcomes for whole groups" (p.43) and conceal the need for interventions at the school, system and societal level.

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In the Irish context Banks *et al.* (2012), using data from *Growing Up in Ireland*, found that:

> ...children from economically inactive and one-parent households and children attending the most disadvantaged school contexts are more likely to be identified with having an EBD, even taking into account their social background characteristics and their scoring on the Piers-Harris wellbeing measure. These findings suggest that the subjective nature of EBD identification is resulting in a disproportionate number of these children being identified with EBD (p. 219).

Overall the evidence clearly points to broader social and educational inequalities being translated into increased special educational needs identification in schools in areas of socio-economic disadvantage. It points to the need for this context to be clearly appreciated in resource allocation models and for interventions at the level of the community. There is also emerging evidence of the cost for families of supporting a child with special educational needs increasing the likelihood of poverty.

1.5.5   Outcomes in literacy and mathematics

The literature review for the Wave 1 Report (Cosgrove *et al.*, 2014), included material from the 2009 National Assessments (NA) of English and Mathematics (Eivers *et al.*, 2010) in relation to low achievement. Here, this is updated using data from the 2014 NA (Shiel, Kavanagh & Millar, 2014) separately for literacy and mathematics. This is followed by presentation of findings from an evaluation of DEIS. While educational outcomes addressed in this report are limited to literacy and mathematics, Darmody and Smyth (2016) report a large increase in exemption rates since 2009 due to learning disabilities, with the authors highlighting the possible role of demographics, increased rates of retention and identification of students with special educational needs.

1.5.5.1   Literacy

Overall performance on reading was significantly higher in NA 14 than in NA 09 by 14 point scores for Second class and by 13 point scores for Sixth class, with substantively important effect sizes (Shiel, Kavanagh & Millar, 2014). There was a reduction in the proportion of pupils in Second class that performed at or below Proficiency Level 1 (lowest level of performance) on overall reading to 22% in NA 14 compared to 39% in NA 09. Similarly, the proportion of pupils in Sixth class that performed at or below Proficiency Level 1 on overall reading was 25% in NA 14 compared to 35% in NA 09. Regarding gender differences, there was a 10 percentage point decrease in the proportion of Second class girls and a 17 percentage point decrease in the proportion of Second class boys that performed at or below Proficiency Level 1 on overall reading in NA 14 compared to NA 09. At Sixth class, there was a 9 percentage point decrease in the proportion of girls and an 11 percentage point decrease in the proportion of boys that performed at or below Proficiency Level 1 on overall reading in NA 14 compared to NA 09.

The authors advised caution in the interpretation of their findings relating to schools in DEIS because the number of such schools in the NA sample was small. Nevertheless it is worth noting that the reading performance of Second class pupils in DEIS schools was also significantly higher in NA 14 than in NA 09, by 14 point scores for pupils in Band 1 schools (with an effect size of 0.35) and by 27 point scores for Band 2 schools (with an effect size of 0.60) (Shiel, Kavanagh & Millar, 2014).

Similarly, the reading performance of Sixth class pupils in DEIS schools was higher in NA 14 than in NA 09. However, the increase of 13 point scores for pupils in Band 1 schools was not statistically significant in contrast to the 14 point scores increase for Band 2 schools which was significant. The effect size of 0.29 for both Band 1 and Band 2 schools is substantively important.

Despite these increases in reading scores, the proportion of low achievers in reading in urban DEIS schools remains large. Forty-four per cent of Second class pupils and 47% of Sixth class pupils in Band 1 schools performed at or below Proficiency Level 1 in NA 14 and in DEIS Band 2 schools, 28% of Second class pupils and 38% of Sixth class pupils performed at or below Proficiency Level 1. This compares to national estimates of 22% for Second class and 25% for Sixth class. Thus, with the exception of pupils in Second class in Band 2 schools, there are disproportionately large numbers of struggling readers in DEIS schools. As the authors of NA 14 claim, substantive improvements have been made in DEIS schools since NA 09, however, "there has been no real reduction in the gap between pupils in DEIS urban schools and in other school types, except at Second class in Band 2 schools" (Shiel, Kavanagh & Millar, 2014, p.xvi). This has to be particularly critical for children with SEN who attend DEIS Band 1 and DEIS urban schools. While acknowledging that additional support for literacy occurs more frequently than that for numeracy (Surgenor & Shiel, 2008; Travers, 2010a, 2010b), analysis substantiates the call for more intensive support for the teachers, parents and children in DEIS Band 1 and DEIS urban schools to reduce the gap in reading performance between pupils in these schools and pupils in other school types (Shiel, Kavanagh & Millar, 2014).

1.5.5.2   Mathematics

A closer look at mathematics achievement highlights that, while significant improvements have been observed, the mathematics achievement of children in disadvantaged contexts must be investigated and addressed, and that a greater emphasis on supports for numeracy is required.

The 2014 report on the National Assessments found that the overall performance on mathematics in Second and Sixth classes was significantly higher in NA 14 than in NA 09, by 14 score points and 12 score points, respectively, with large effect sizes. This was the first time since 1980 in which there have been statistically significant increases in performance on English reading and Mathematics (Shiel, Kavanagh, & Millar, 2014).

In addition, 26% of pupils in Second class performed at Proficiency Level 1 or below on overall mathematics, compared to 35% in NA 09. The proportion of Second class boys performing at or below Level 1 decreased by 10 percentage points and the proportion of girls performing at or below Level 1 decreased by 9 points.

At Sixth class, 27% performed at or below Level 1. The proportion of boys performing at or below Level 1 on the overall mathematics scale decreased by 7 percentage points, while the proportion of girls performing at the lowest levels decreased by 8 percentage points. In Second class Mathematics, pupils in Band 1 DEIS schools in NA 14 had a mean score that was 13 points higher than in NA 09, though the difference was not statistically significant, though the effect size (0.28) can be considered to be substantively important (Shiel, Kavanagh, & Millar, 2014).

Pupils in Sixth class in Band 1 schools in NA 14 had a mean score on overall mathematics score that was higher than that of pupils at the same class level in NA 09. While the difference of 14 points was not statistically significant, the effect size of 0.29 can be interpreted as being substantively important (Shiel, Kavanagh, & Millar, 2014).

For English reading and mathematics at Second and Sixth classes in both Band 1 and Band 2 schools, there were significant reductions in the proportions of pupils performing at or below Proficiency Level 1, and increases in the proportions of pupils performing at Levels 3–4. However, in the case of Band 1 schools in particular, there are still large proportions of pupils performing at the lowest proficiency levels.

Putting this in context, the report finds that the data for mathematics in DEIS schools indicate that there is still considerable scope for improvement. Indeed, with the exception of DEIS Band 2 schools in Second class, improvements in performance have only kept pace with those of pupils in schools in general, and performance is still well below national standards (Shiel, Kavanagh, & Millar, 2014, p.xvi).

While the literacy and numeracy strategy places emphasis on both areas there has been evidence for some time that additional support afforded to literacy in schools far outweighs that given to mathematics or numeracy (Surgenor & Shiel, 2008, Travers, 2010a, 2010b). This has been further confirmed in an analysis of the delivery of learning support and resource teaching in a sample of urban primary schools serving areas of disadvantage.

Learning support in numeracy occurred less than half as frequently in the sample than literacy learning support. Across all grades, 94 teachers (7.9% of the sample) indicated that pupils had been withdrawn for support in numeracy. In the junior classes, numeracy learning support did not occur at all at junior infant level, and was almost non-existent at senior infant level (with 0.0% and 0.8% of classes involved respectively). Numeracy learning support occurred most frequently at 5th and 1st class (12.4% and 12.2% of teachers reporting withdrawal of pupils, respectively) (Weir, Moran & O'Flaherty, 2014, p.15).

1.5.5.3   Evaluation of DEIS

The monitoring of change in achievement (by comparing test scores in reading and mathematics) over the period 2006/07 to 2015/16 is a major feature of the evaluations of DEIS and findings are broadly in line with those of NA 14. The evaluation involves cross-sectional comparisons of achievement between different student cohorts as well as longitudinal studies of achievement. Pupils in 2nd, 3rd, 5th and 6th class (typically eight, nine, eleven and twelve-year olds) were tested in reading and mathematics in a sample of 120 urban schools. Pupils in the same schools and class levels were retested on two further occasions (2010 and 2013), and retesting is taking place again in May of 2016. Longitudinal comparison is possible because some of these students were tested on more than one occasion (e.g., those in 3rd class in 2010 were tested again in 6th class in 2013). The evaluation of the programme revealed that the measured achievements (in English reading and mathematics) of pupils attending schools participating in DEIS are well below those of pupils on whom the tests were standardised (Weir & Denner, 2013).

However, significant increases were observed at all grade levels tested in both reading and mathematics between 2007 and 2010 and again between 2010 and 2013 and in both the cross-sectional and longitudinal analyses. A major, but not sole, factor contributing to these overall increases was reductions in the percentages of students exhibiting low achievement. This is defined, for the purposes of the evaluation, as performance at or below the tenth percentile. For example, 13.2% of students in second class in Band 1 schools performed at or below the tenth percentile on the reading test in 2013 compared to 18.6% in 2010 and 26% in 2007. In Band 2 schools, the corresponding figures were 8.5%, 12.9% and 17%. Results in the other grade levels tested were less impressive than those in second class but were broadly similar. The pattern of results for mathematics was similar, although the increases in average scores and the reductions in low achievement were less marked than those for reading.

In Weir and Denner (2013) and in a soon to be published paper (Weir, in press), the issue raised in the above quote from Shiel *et al.* is discussed briefly (i.e. the extent to which the observed gains in DEIS schools simply reflect improved achievement across all schools). Weir (in press) raises a related question about the extent to which DEIS schools might have contributed to the overall improvements. She goes on to note that there is no definitive way, at present, of answering these questions.

Weir also points to a number of factors that might have been expected to lead to a decline in achievement in DEIS schools over the period. These include significantly improved attendance on the days that testing occurred and reductions in the numbers of students exempted by their teachers from testing. Furthermore, the economic recession, which might well have had a disproportionate negative impact on students whose families were in disadvantage before the recession began, may have also been a factor.

1.5.6 Transitions

The student experience of transition from primary to post-primary school has been well documented in research. The salient or potentially problematic features of school transition relate to changes in building size, layout, orientation, organisation of the school day, workload, curricular content and grading practices, to patterns of discipline, classroom management and teaching styles, and to interactions and relations with other students. Consistently, research highlights the importance of students' successful negotiation of transition, indicating that negotiation of the salient features of school transition impacts on children's adjustment, self-perceptions, perception of school, intrinsic value for school work, engagement and academic performance, with successful negotiation bearing positive impact (Anderson, Jacobs & Schramm, 2000; Galván, Spatzier & Juvonen, 2011; Hertzog, Morgan, Diamond & Walker, 1996; Ryan, Shim & Makara, 2013; Silverhorn, DuBois & Crombie, 2005; Wigfield & Eccles, 1994).

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While research reports that many students prior to entering post-primary school are hopeful about the potential of their new status, school, friends and education and look forward to a fresh start, paradoxically, students also perceive the transition as stressful (Akos & Galassi, 2004; Ashton, 2008; Graham & Hill, 2003; Kirkpatrick, 2004; West, Sweeting & Young, 2010). Nonetheless, many students appear to adapt quickly and successfully with some reporting coping better than expected (Akos & Galassi, 2004; Gillison, Standage & Skevington, 2008). However, for the proportion of students who do not cope adequately, research indicates an association between poor transition negotiation and psychosocial problems such as low self-esteem, declining self-concept, antisocial behaviour, anxiety, loneliness and depression (Anderman, 2002; Benner & Graham, 2009; Bouffard, Boileau & Vezeau, 2001; Parker, 2009; West *et al.*, 2010).

Additionally, studies have found an increase in instances of disciplinary action (Theriot & Dupper, 2009) and peer victimisation (Williford, Brisson, Bender, Jenson & Forest-Bank, 2011) while challenges relating to peer acceptance and rejection can be heightened (Kingery, Erdley & Marshall, 2011). Risk factors that directly influence transition outcomes are low socio-economic status, gender, lower school ability and being from a different cultural background to that of the majority of the school population (Anderman, 2002; Benner & Graham, 2009; Tilleczek & Ferguson, 2007). Protective factors that may indirectly influence the effects of risk factors, either positively or negatively, are individual temperament, personality and social skills, family support, and peer support and friendship (Ashton, 2008; West *et al.*, 2010; Tilleczek & Ferguson, 2007).

Despite the research focus on primary to post-primary school transition from the 1990s, Hughes, Banks and Terras (2013) estimate that the proportion of transition studies focusing specifically on children with SEN is approximately 17%, and highlight that these studies involve low numbers of participants (n = 389). More recent studies also involve low numbers of participants along with a focus on a particular category of SEN (Foulder-Hughes & Prior, 2014; Lane, Oakes, Carter & Messenger, 2014), while one study conducted in the Irish context included 32 pupils with a diverse range of specific needs (Barnes-Holmes *et al.*, 2013). As such, research on the transition experiences of students with SEN is limited in generalisability and scope. Acknowledging that not all will experience negative adjustment, this growing body of research suggests that children and adolescents with SEN are at increased risk of problems at the time of transition, leading to less favourable adjustment outcomes (Anderson *et al.*, 2000; Carter *et al.*, 2005; Farmer *et al.*, 2012; Margalit, 2004; Tilleczek & Ferguson, 2007). Regarding academic impact of the transition, research identifies students with SEN as vulnerable based on outcome evidence confirming larger interruptions in their growth in achievement across the transition in comparison with their typically developing peers (Akos, Rose & Orthner, 2015).

A consistent finding across the studies focusing on the transition experiences of students with SEN is that students with specific learning difficulties perceive lower levels of support and increased peer problems and bullying than typically developing students after transition. To this end, in their comparative and longitudinal study on the impact of transitions on students with specific learning difficulties and those without SEN, Forgan and Vaughn (2000) investigated social and academic outcomes at four time points before and after transition from elementary to middle school in the US. Measures included a friendship survey, the *Piers-Harris Children's Self-Concept Scale* (Piers, 1984) and *The Basic Academic Skills Sample* (Espin & Deno, 1989).

Findings revealed there were no differences in how favourably both groups of students viewed the transition. While scores remained relatively stable for both groups across the two years, the academic self-esteem and friendship scores for students with learning difficulties decreased after transition. In contrast, the academic self-esteem scores of typically developing students remained the same while their friendship scores recorded improvement. Additionally, students with learning difficulties reported experiencing lower levels of support and more peer problems and victimisation than typically developing students after transition.

A retrospective investigation of the influence of transition on the cognitive, social and behavioural development of 550 students in their first year of post-primary school found no significant differences to indicate that students with SEN (n=110) had a worse experience of transition than children without SEN (Evangelous *et al.*, 2008). However, of the 110 students with SEN, 37% had concerns with bullying compared to only 25% of the students without SEN.

Research by Tur-Kaspa (2002) examined the social experiences of students with specific learning difficulties in general education classes in Israel (n=207) compared to a control group of students without learning difficulties (n=101) after transition and at the end of first year of post-primary school. Results indicated that children with specific learning disabilities experienced more social rejection and were rated by their teachers as having poorer social skills in the areas of co-operation, self-control and assertion.

Martinez (2006) devised a cross-sectional study to compare perceptions of social support among four groups of sixth to eighth-grade children after transition to middle school. The four groups were as follows: children with specific learning difficulty in maths; children with specific learning difficulty in English; children with multiple difficulty (both maths and English); and children with no learning difficulty. Results indicated that children with learning difficulties in each of the three grade levels perceived poorer peer, classmate and parental support than children without disabilities after transition, and children with multiple difficulties perceived less support than any other group.

Highlighting the significance of support, a qualitative study investigating the transition experiences of 32 pupils with SEN and their parents in Ireland reported that, while generally the transition experiences of these children did not necessarily differ from those children without SEN, the importance of having a significant other individual who was involved in the transition process to provide support and with whom to discuss issues arising from the experience, was consistently reflected in data relating to the children and their parents (Barnes-Holmes *et al.*, 2013). The apparent increased risk of a lack of peer and parental support and of problems with bullying across the transition for students with specific learning difficulties highlights the importance of involving peers and parents in targeted supports and transition programmes to promote the social adjustment of all children throughout and following the transition.

A second key finding across a number of school transition studies which focus on a particular category of special need in participant selection highlights the critical importance of individual variation in expectations and support needs during the transition regardless of category. Maras and Aveling (2006) conducted a longitudinal study using interviews with students and their

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parents and school staff to develop six in-depth case studies focusing on the transition process. Student participants included three with non-specific emotional and behavioural difficulties, one with autism and one with Down syndrome. Findings revealed that the participants varied in their concerns, anxieties and expectations prior to advancing, and in their needs during the transition, with some adapting alongside peers without SEN, while others required more structured support. Similarly, schools differed in the quality and efficacy of the supports provided. Adjustment to secondary school was facilitated by the continuity of support throughout, the provision of a dedicated space within the new school where the students with SEN could relax, and flexibility of the school in adapting the timetable to suit students' learning preferences and needs. Findings support the conclusion that the same support services will not necessarily suit all young people with SEN and, thus, support has to be tailored to individual student needs.

Foulder-Hughes and Prior (2014) investigated the transition perceptions of six students with autism spectrum disorder (ASD) and/or developmental co-ordination disorder (DCD). The students were interviewed in advance of the move to their secondary school and, while some of the concerns they identified are shared by children generally, a major concern for them was physical exercise (PE) at secondary school. Whether the students' heightened anxiety relating to PE is associated with early negative experiences at primary school or awareness of their motor difficulties, the researchers highlight the necessity for greater understanding of the complex needs of the children.

Thus, this section of the review indicates that children with SEN can encounter unique and heightened challenges as they transfer to and progress through the initial stages of post-primary school and, as such, transition programmes and additional supports should target the individual needs and requirements appropriate to securing a positive adjustment across the transition for individual students with SEN.

1.5.7   Emotional health and wellbeing, special educational needs and emotional and behavioural difficulties

The drive towards inclusive education and equality of educational access and provision has spawned widespread research interest in the profile and individual characteristics of children with SEN in mainstream and special school settings. Research nationally (e.g. Banks, Maitre, & McCoy, 2015; McCoy, Banks, & Shevlin, 2012) and internationally (e.g. Lupton, Thrupp, & Brown, 2010; Morgan *et al.*, 2012) confirm sizable differences in the prevalence rates of SEN across socio-economic groups, school types and gender. For example, the *National Disability Survey* Child Questionnaire (Banks, Maitre, & McCoy, 2015) yielded interesting findings for boys and girls with Emotional, Psychological and Mental Health (EPMH) disabilities. As reported, compared to children with other SEN (e.g. intellectual and learning disabilities, remembering or concentrating disabilities or speech disabilities), children, and girls in particular, with EMPH disabilities are at greater risk of absenteeism: 25% of children with EPMH disabilities accumulate at least three months' absence from school compared to a total of 9% of young people with intellectual or learning disabilities. Additionally, children with SEN, and boys in particular, were more likely to be socially isolated because they were less inclined to engage with their peers or participate in sport regularly.

These findings raise justifiable concerns not least because some researchers (e.g. Moreira *et al.*, 2015) argue that understanding of the subjective wellbeing of young people with SEN as a multidimensional construct encompassing "...affect, satisfaction with social support, life satisfaction and quality of life" (p. 1224) is uncommon in the literature. They argue the need for such understanding given that co-morbidity in students with SEN is not uncommon and young people typically present with a range of deficits across important functioning domains (e.g. cognitive functions, communication and language competencies, social, emotional and behavioural), the interaction of which challenges adaptive trajectories and positive functioning over time. Their study which analysed composite subjective wellbeing relative to health in a cohort of 603 students (248 with, and 355 without, SEN), pointed to lower levels of subjective well-being in students with SEN, across categories of disability, that were statistically significant (p < .001). Of particular note was the finding that students with ADHD recorded the lowest levels of health-related quality of life in comparison with other health conditions (e.g. intellectual disability, visual impairment, hearing impairment, neuro-motor impairment) which the authors associated with difficulties experienced by these students in making and maintaining friendships and engaging in school activities.

1.5.7.1   Research Issues

Although the early-onset of conduct problems and behavioural difficulties with adverse consequences in later life associated are not new, some researchers (e.g. Fergusson, Horwood, & Ridder, 2004) argue that the generalisability of this research may be compromised because studies are either too narrowly focused on one specific end-point (e.g. unemployment opportunities in later life), and/or the research examines outcomes over a limited follow-up period. Their longitudinal study of a birth cohort in New Zealand over a 25-year period identified statistically significant associations between childhood conduct problems from 7–9 years and risks of adverse outcomes across measures including crime, substance abuse and mental health, even after controlling for confounding factors such as childhood, family and educational characteristics. While associations between conduct problems and adult outcomes were similar for males and females, rates of these outcomes were between 1.5 and 1.9 times higher for children in the most disturbed 5% of the cohort than those for the least disturbed 50% of the cohort.

Other researchers including Vierhaus, Lohaus and Shah (2010), who looked at the impact of two alternative research designs (longitudinal and cross-sectional) on the development of internalising behaviours from childhood to adolescence, found systematic variability with the research design for girls. Using data from two longitudinal mixed gender samples of 432 and 366 second and fourth grade children, the authors surmised that the decrease in internalising symptoms recorded between the first and second measurement time-points in particular might be accounted for by a 'novelty-distress effect' (i.e. the influence of strain present during initial testing) experienced by girls but not boys. The slight but significant decrease characterising the common trajectory recorded when the researchers controlled for this effect led them to conclude that trajectories based on longitudinal assessments may suggest more changes in internalising symptoms than actually occur. In contrast, trajectories based on data from cross-sectional studies may suggest increased levels of internalising symptoms.

1.5.7.2   Gender issues

The relationship between gender and emotional and behavioural difficulties for children with special educational needs is key, particularly in relation to anti-social behaviour and assessment. Related research on the development of anti-social behaviour in girls, such as that conducted by Silverton and Frick (1999), has raised questions about the role gender might play. Their review of research led them to suggest that the assumed dual trajectories associated with the development of antisocial behaviour in boys (childhood onset and adolescent onset) may not necessarily apply to girls. Proposing a 'delayed-onset pathway' in girls, analogous to the childhood-onset pathway in boys, they argued that, while factors contributing to antisocial behaviour in girls may present in childhood, they do not present as severe or overt antisocial behaviour until adolescence. Later research by Marmorstein and Marmorstein (2005) that examined the evolution and development of antisocial behaviour beginning in mid- to late-adolescence (late onset), with antisocial behaviour that can be traced to early adolescence (early onset that persists through adolescence or desists during mid-adolescence), found that irrespective of the time of onset both groups shared higher risk for later adverse life circumstances and life chances. Significantly, however, while the persisting and desisting groups included a greater representation of males, the late-onset group was over-represented by females who are excluded from diagnosis of antisocial personality disorder although they may exhibit many of the same negative correlates of persisting antisocial behaviour.

Other researchers such as Crick and Zahn-Waxler (2003), who included a review of the role of gender in the development of psychopathology, highlighted a focus in the literature on identifying and explaining differences between males' and females' internalising and externalising behaviours. An interesting development in more recent research in this area is the deliberate movement away from analysing and interpreting developments and patterns of behaviour in girls and women from a purely male perspective based on the argument that adopting a 'male lens' to assess behaviours which have been shown to differ fundamentally is likely to lead to researchers' under and/or over-estimation of female behaviours (Andershed, 2013). In response, some researchers (e.g. Crick & Zahn-Waxler, 2003; Rutter, Caspi & Moffitt, 2003) have called for gender-specific constructions and assessments to help uncover aetiological processes and trajectories in the development of pathology for boys and girls, respectively, across the life-span.

In complementary research, the practice of measuring externalising behaviours in childhood that classifies children into different diagnostic subgroups has been criticised by Fergusson, Horwood and Ridder (2004) who advocate using a broad dimensional measure that uses ranks to measure disorder levels. With reference to Fergusson and Howrood (1995), who demonstrated the superior predictive validity of dimensional measures over categorical measures (DSM-IV), Fergusson *et al.* (2004) argue that traditional assessment methods may facilitate diagnosis and treatment but are unlikely to predict long-term outcomes optimally. This is because children exhibiting symptoms at levels lower than designated diagnostic thresholds typically do not belong to an homogeneous group and they exhibit varying symptom levels with "...the net effect... that many of those with symptom levels that would have been considered to be sub-clinical by current diagnostic criteria were nonetheless at appreciably increased risks of later adverse outcomes" (p.26). Hence, they urge targeting support at the risk factor rather than those at the clinically significant extremes.

1.5.8 Bullying

Given the increasing research interest in the literature in bullying that reflects growing awareness and understanding of the adverse, and sometimes detrimental, long-term psychological, social and emotional consequences on victims (Arseneault, Bowes, & Shakoor, 2010; Nixon *et al.*, 2011), the issue is considered separately here. While the issue of defining and measuring bullying is complex (Felix *et al.*, 2011; Guerin & Hennessey, 2002; Kauffman, 2015; Olweus, 1997; Rose *et al.*, 2015; Swearer, Siebecker, Johnson-Frericks, & Wang, 2010), the need to address the issue remains.

Cook *et al.* (2010), undertook a meta-analytic investigation of the predictors of bullying and victimisation in childhood and adolescence, and note a significant quantifiable increase in education- and school-focused peer-reviewed research published in the decades 1980–2000 and 2000–2009 respectively on bullying which they attribute to more focused concern about bullying as a specific and pernicious form of aggressive behaviour. Of the 14 predictors of school bullying they identified from the 153 articles included in their review, nine individual student characteristics were identified (age, gender, externalising behaviours, internalising symptoms, low social competence, poor social problem-solving skills, poor academic performance, negative attitudes and beliefs about others, negative self-related cognition); the remaining five predictors (family and home environment, school climate, community factors, peer status, and peer influence) represented contextual factors. Their analyses focused on evaluating the relative strength of effect sizes across both sets of predictors in acknowledgement of the fact that bullying is a relational construct that, of necessity, occurs in a social situation. Amongst the key findings of this research are useful summaries of the significant predictors for what the authors describe as three distinct 'bully status groups': the 'typical bully', the 'typical victim' and the 'typical bully victim' (see Table 1.1).

Table 1.1 highlights what Cook *et al.* (2010) term 'shared predictors' across bully status groups (e.g. contextual factors such as family/home environment and individual characteristics such as poor social problem-solving skills) suggesting common aetiology. However, unique relational predictors were also reported; for example, negative self-related cognitions were associated with bully victims whereas demeaning attitudes and beliefs about others were more associated with bullies.

Table 1.1: Summary of Significant Predictors for Bully Status Groups

Typical of children exhibiting bullying behaviour	Typical of children who are victims of bullying	Typical of children exhibiting both bullying behaviour and victims of bullying
Exhibits significant externalising behaviour, has internalising symptoms, has both social competence and academic challenges, possesses negative attitudes and beliefs about others, has negative self-related cognitions, has trouble resolving problems with others, comes from a family environment characterised by conflict and poor parental monitoring, is more likely to perceive his/her school as having a negative atmosphere, is influenced by negative community factors and tends to be negatively influenced by his/her peers.	Is likely to demonstrate internalising symptoms; may also engage in externalising behaviour; lacks adequate social skills; possesses negative self-related cognitions; experiences difficulties in solving social problems; comes from negative community, family and social environments; and is noticeably rejected and isolated by peers.	Has comorbid externalising and internalising problems; holds significantly negative attitudes and beliefs about him/herself and others; is low in social competence; does not have adequate social problem-solving skills; performs poorly academically and is not only rejected and isolated by peers but also negatively influenced by the peers with whom s/he interacts.

Source: Cook *et al.* (2010).

Recently, Farmer *et al.* (2010) have cautioned against stereotyping bullies and their victims in this way in recognition that student behaviours are not fixed or static but fluid and subject to change depending on personal and social circumstances. In response they proffer what they term 'two social worlds of bullying': 'marginalisation' in which students may "…fight against a social system that keeps them on the periphery…" and 'connection' in which students may "…use aggression to control others…" (Farmer *et al.*, 2010, p. 386).

Other researchers (e.g. Chatzitheochari, Parsons, & Platt, 2014) highlight the disproportionate attention paid in quantitative studies, until relatively recently, to students without special needs despite a significant corpus of qualitative research reporting how pervasive bullying is amongst children with special educational needs. Such research is needed, it is argued, not least because bullying has the potential to become a disabling factor in itself, compounding the challenges students with SEN face and potentially reinforcing inequality and division (Janus, 2009). As cautioned by Rose, Monda-Amaya & Espelage, 2011, p. 123, inclusive education may inadvertently "…maintain or exacerbate victimisation…" in situations where students with SEN are isolated from their peer-groups.

A number of large-scale studies (e.g. Chatzitheochari, Parsons, & Platt, 2014; Hartley *et al.*, 2015) that have been undertaken recently focused specifically on the nature and incidence of bullying amongst students with disability and/or special needs in mainstream and special education settings. Hartley *et al.* (2015) conducted a recent study in the US, comparing the incidence of self-reported verbal, relational and physical bullying among 3,305 students across mainstream and special education settings. Findings included more frequent reports of physical and emotional victimisation that generated more psychological distress from students within SEN settings; this was attributed to staff and teachers as well as peers. Although the frequency of verbal and relational victimisation across settings was comparable, higher incidences of physical bullying were reported in SEN settings.

Findings from an investigation by Rose and Espelage (2012) that compared measures of bullying, fighting, victimisation and anger amongst 163 middle-school students of mixed ethnicity, with and without specific learning and/or emotional and behavioural difficulties, point to interesting and unique characteristics among student subgroups. Specifically, students with emotional and behavioural difficulties reported higher levels of bullying than students with other kinds of special needs. Predictive factors included victimisation, anger and delinquency which, in turn, were shown to contribute to higher levels of proactive and reactive aggression amongst this subgroup of students.

1.5.9 Prevention

The movement away from a deficit model of SEN to a biopsychosocial understanding and approach has resulted in greater consideration being given to the contexts in which students with BESD live and learn and, in particular, the organisational and social structures in schools. A recurring theme in the literature (e.g. Byers *et al.*, 2008; Luciano & Savage, 2007) is the importance for students with SEN, and those with BESD in particular, to experience school contexts in which behavioural expectations are made explicit, rules and codes of behaviour are adhered to and teaching and learning is organised and structured to reflect the principles of inclusive practice. Of particular import, for example, is finding an acceptable compromise between providing additional supports in a manner that does not reinforce isolation from peers and the opportunities to form friendships or undermine opportunities for self-regulation and independence. Schools are recommended to deliberately challenge isolation, victimisation, alienation and bullying by developing whole school policies that are implemented with fidelity by staff and complemented by curricula that explicitly teach students appropriate behaviours, ranging from reporting incidences to engaging in peer mediation which tend to reduce the incidence and gravity of difficulties (Cohen & Freiberg, 2013).

Summary of policy and literature review

At a policy level there is a presumption in favour of inclusive education while recognising the need for a continuum of provision. Criticism of the existing resource allocation model has led to the development of a proposed new model by the NCSE based on a school's educational profile and number of children with complex special educational needs. The pilot of this model has recently concluded.

In addressing the research questions around change and stability across the two Waves, the literature points to some expected changes in categories of special education needs due to developmental, environment and teaching and learning interventions. In relation to outcomes for engagement, wellbeing and achievement the literature points to associated influencing factors. An area of concern in this regard is the link between socio-economic status and special educational needs. The evidence points to broader social and educational inequalities being reshaped as special educational needs in areas of socio-economic disadvantage.

In relation to outcomes in literacy and mathematics some encouraging findings showing a reduction in low achievers have emerged from the evaluation of the DEIS programme, however, the proportion of low achievers in urban DEIS schools remains large.

In relation to transition to post-primary school, the limited number of studies focusing on children with special educational needs points to students with learning difficulties perceiving lower levels of support and increased peer and bullying issues following transition than their typically developing peers.

The literature on wellbeing and emotional and behavioural difficulties highlights many of the negative social and academic consequences of experiencing difficulties. It also points to clear gender differences in the profile of boys and girls in the development of difficulties. The detrimental, long-term psychological, social and emotional consequences on victims of bullying is also highlighted. In terms of prevention of difficulties the literature emanating from a biopsychosocial understanding of special educational needs has resulted in greater consideration being given to the contexts in which students with BESD live and learn and, in particular, the organisational and social structures in schools.

1.6   Content of this report

Chapter 2 describes the way in which children with special educational needs have been classified at age 13 (Wave 2 of GUI), and compares this classification to when they were aged 9 (Wave 1). Chapter 2 also provides an overview of supports that children received at ages 9 and 13 and contains a guide for interpreting the analyses and results in Chapters 3, 4, 5 and 6.

Chapter 3 provides a description of the school and home contexts of children at age 9 and provides brief descriptions of changes in these contexts between ages 9 and 13. The main aim of Chapter 3 is to provide a context in which to interpret the comparisons of children with and without special educational needs which follow in subsequent chapters.

Chapter 4 presents a detailed analysis of a range of outcomes of children at age 13. Several measures are examined under each of three overarching themes: *engagement and attendance*, *wellbeing*, and *achievement and expected attainment*.

Chapter 5 examines progress and change in a selection of eight of the outcomes from Chapter 4. These are again grouped under the three overarching themes. Progress and change across different SEN groups for each of the outcomes at age 13 are compared both before and after accounting for that outcome at age 9.

Chapter 6 draws findings from Chapters 4 and 5 together by examining five outcomes in greater detail using multilevel modelling. Multilevel modelling allows for the fact that children are clustered in schools. Each outcome at age 13 is compared across SEN groups, before and after accounting for that outcome at age 9, together with a range of individual- and school-level characteristics.

Chapter 7 provides a summary of key findings and considers some of the implications arising from the study, both in terms of policy and future research. In Chapter 7, reference is made to the conclusions arising from the first phase of the study (Cosgrove *et al.*, 2014), building on and developing these using the findings from phase two.

2.   Classification of children with special educational needs and methods used in data analysis

2.1   Chapter overview

As noted in Chapter 1, the present study uses data collected during Wave 1 (2007–2008) and Wave 2 (2011–2012) of the Growing up in Ireland (GUI) study, when children were aged 9 and 13, respectively. The general aim of GUI is to "understand all aspects of children and their development" (www.growingup.ie) including, but not specifically focusing on, special educational needs.

Since this study consists of secondary analyses of data that have already been collected, the classification scheme for SEN was constrained by the pre-existing content of the questionnaires, and has some limitations. However, every attempt has been made to optimise the classification using the information available, and to describe and explain the limitations associated with it.

This chapter is organised into four main sections. The first describes the classification scheme for special educational needs (SEN) that was developed for analyses contained in this report ('Classification scheme at age 13'). The second describes the scheme that was used in the first phase of this study, using data when children were aged 9 only ('Classification scheme at age 9'), and compares the age 9 and age 13 schemes. The third section examines the provision of support for children with special educational needs at ages 9 and 13, while the fourth section provides a non-technical description of the methods used in the analyses contained in this report.

2.2   Classification of children with special educational needs at age 13

2.2.1   Overview of the classification scheme at age 13

The classification of special educational needs (SEN) when children were 13 years old was derived from parents' responses. Primarily on the basis of these responses, the following seven-group scheme[5] was arrived at (Box 2.1):

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[5]   The seven specific categories of special educational needs arising from the GUI data are for the purpose of the report, and do not align with categories of special educational needs in the resource allocation model.

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Box 2.1: Seven-group classification of special educational needs at age 13 (N=7,525)

Behavioural, emotional or social difficulties	(4.1%)
General learning disabilities or difficulties	(2.5%)
Specific learning difficulties or speech and language difficulties	(8.0%)
Autistic Spectrum Disorders	(1.4%)
Physical/sensory disabilities that impact on daily life	(0.7%)
Multiple or unclassified special educational needs	(1.3%)
Special educational needs at age 9 only	(8.9%)
No special educational needs at age 9 or 13	(73.1%)

Note. These are weighted percentages (Wave 2 sample weight).

Figure 2.1 illustrates the prevalence of special educational needs for children across both waves of the study. Children classified at age 9 only were classified as having special education needs at age 9, but none at age 13. They are included as a separate group throughout the report. Children classified at age 9 *and* age 13 are identified as having special educational need(s) at both waves and this group may or may not have remained within the same classification group as they were at age 9. Children classified at age 13 only were identified after age 9.

Figure 2.1: Prevalence of special educational needs at ages 9 and/or 13[6]

SEN at age 9 only: **8.9%**

SEN at ages 9 and 13: **11.2%**

SEN at age 13 only: **6.8%**

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6   Not to scale.

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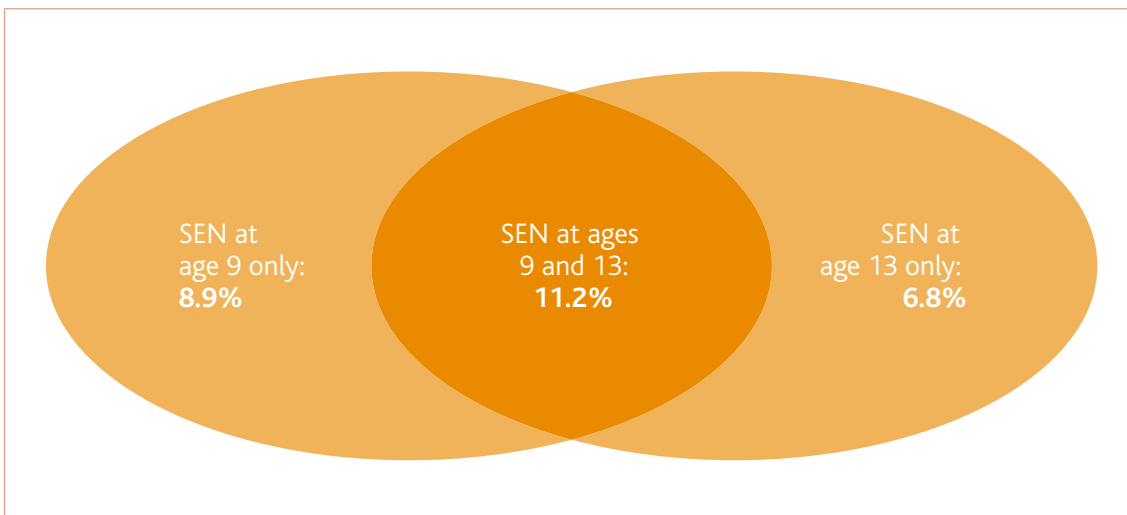
Overall, we estimate that:

- 17.9% of the 7,525 children who took part at age 13 had special educational needs at the time of the Wave 2 survey[7].

- 26.9% of children had special educational needs at either or both age 9 and 13.

- 8.9% of children had special educational needs at age 9 but not at age 13.

- 6.8% of children had special educational needs at age 13 but not at age 9 (meaning that they were identified after the age of 9).

Appendix 2 provides a detailed description and rationale of how this classification was arrived at.

The key features and limitations of this classification scheme are:

- Children with a physical or sensory disability in our classification scheme are limited to those where parents have indicated that the difficulty impacts on the child's daily life. There were 56 children in this group overall. 92 children were identified as having a physical or sensory disability, but 36 of these children had other special educational needs, and therefore are in the multiple and unclassified SEN group. The classification of children with physical and sensory difficulties is problematic in that it has not been possible to provide separate categories for those who have visual, hearing and physical disabilities. Also, some of the children in this group have more than one physical or sensory difficulty. Appendix 2 shows more information about this group of children.

- The classification of children with general learning difficulties or disabilities (GLDD) covers a broad range from learning difficulties to mild, moderate and severe general learning disabilities. There are 185 children in this group overall. While it could be possible to use additional information from the dataset, such as age of diagnosis, to refine and divide this group, we have not done so, since any use of such additional information rests on a number of untestable assumptions.

- Children with assessed syndromes are grouped within a more general 'multiple or unclassified SEN' category, though a small number of these children may have Down Syndrome. This 'multiple/unclassified' category includes children with complex and varied needs. There are 95 children in this group.

- The classification of children with behavioural, emotional and social difficulties (BESD) includes children with high (clinical) scores on the Strengths and Difficulties Questionnaire (SDQ), as well as children with ADD/ADHD and/or mental health difficulties (as indicated by their parents), so again, this group of children is varied in needs, as well as likelihood of formal diagnosis. There are 309 children in this group.

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[7] This prevalence estimate of 17.9% at age 13 is almost identical to the estimate of 18% made in the NCSE's (2006, p. 75) report on the phased implementation of the 2004 EPSEN Act: "We estimate that the total number of children in Ireland with a special educational need is 190,303, equivalent to almost 18% of all children".

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- Children identified with special educational needs at age 9 but not age 13 needed to be included in some way in the classification scheme, since many of the analyses in this report examine change over time. Therefore, the scheme includes a category for children who had special educational needs at age 9, but not at age 13. There are 667 children in this group.

2.2.2 A closer look at the classification scheme at age 13

Table 2.1 shows the classification scheme at age 13 with frequencies overall and by gender. It distinguishes between seven groups of children and includes their SEN status at age 9 if SEN was not present at age 13.

Table 2.1: Seven-group classification scheme for analysis purposes, overall and by gender

Group: all children	N	%
No special educational needs either wave	5506	73.1
Special educational needs at ages 9 and/or 13	2017	26.9
All children	**7525**	**100.0**
Of children with special educational needs...		
Behavioural, emotional and social difficulties	309	4.1
General learning disabilities or difficulties	185	2.5
Specific learning difficulties or speech and language difficulties	602	8.0
Autistic Spectrum Disorders	103	1.4
Physical/sensory disabilities that impact on daily life	56	0.7
Multiple or Unclassified SEN	95	1.3
SEN Age 9 only	667	8.9
Group: boys	N	%
No special educational needs either wave	2673	69.7
Special educational needs at age 9 and/or 13	1160	30.3
All boys	**3833**	**100.0**
Of boys with special educational needs...		
Behavioural, emotional and social difficulties	145	3.8
General learning disabilities or difficulties	97	2.5
Specific learning difficulties or speech and language difficulties	355	9.3
Autistic Spectrum Disorders	83	2.2
Physical/sensory disabilities that impact on daily life	27	0.7
Multiple or Unclassified SEN	57	1.5
SEN Age 9 only	396	10.3

Table 2.1 (cont'd): Seven-group classification scheme for analysis purposes, overall and by gender

Group: girls	N	%
No special educational needs either wave	2833	76.8
Special educational needs at age 9 and/or 13	859	23.2
All girls	**3692**	**100.0**
Of girls with special educational needs...		
Behavioural, emotional and social difficulties	165	4.5
General learning disabilities or difficulties	88	2.4
Specific learning difficulties or speech and language difficulties	247	6.7
Autistic Spectrum Disorders	20	0.6
Physical/sensory disabilities that impact on daily life	29	0.8
Multiple or Unclassified SEN	38	1.0
SEN Age 9 only	271	7.4

Note. Data are weighted by the GUI Wave 2 sample weight.

Table 2.1 also shows the percentages of boys and girls in each group of the classification scheme. Among boys, 30.3% had special educational needs at age 9 and/or 13, which is higher than the corresponding percentage for girls (23.2%). Also, the table shows that 20% of boys had special educational needs at age 13 only or at both ages (30.3%–10.3%), which again is higher than the percentage for girls (15.8%; 23.2%–7.4%). This seven-group classification scheme is the focus of analysis in Chapters 3, 4 and 5 of this report.

Table 2.2: Simplified classification scheme for use in multi-level analyses

SEN group	N (all)	% (all)	N (boys)	% (boys)	N (girls)	% (girls)
No SEN either age	5506	73.2	2673	69.7	2833	76.8
SEN Age 9 only	667	8.9	396	10.3	271	7.4
SEN Age 13 only	509	6.8	261	6.8	248	6.7
SEN Ages 9 and 13	842	11.2	504	13.1	339	9.2
Total	**7525**	**100.0**	**3833**	**100.0**	**3692**	**100.0**

Note. Data are weighted by the GUI Wave 2 sample weight.

Table 2.2 shows a simplified classification scheme that is used in some parts of the report, particularly in the multilevel analyses of the data (Chapter 6). The table indicates that 73.2% of children were not identified as having special educational needs at either age; 8.9% had special educational needs at age 9 but not at age 13; 6.8% had special educational needs at age 13 but not at age 9; and 11.2% had special educational needs at both ages. Slightly more boys than girls

had special educational needs at age 9 only and at both ages 9 and 13, while the percentages of boys and girls with special educational needs at age 13 only are around the same.

2.3 Classification scheme at age 9 and comparison with classification scheme at age 13

The classification scheme at age 9, which consists of 12 groups, is described in detail in Cosgrove *et al.* (2014, Chapter 2). We provide a brief recap to facilitate comparisons across waves. The scheme was developed for the first report in order to capture more common combinations of multiple special educational needs where they occurred. The estimated prevalence of special educational needs on the basis of this analysis (27.8%) was similar to a prevalence estimate of 25% reported previously, also on the basis of the GUI nine-year-old data (Banks & McCoy, 2011). The groups that emerged from the age 9 analysis are listed in Box 2.2 together with the percentages of children in each category.

Box 2.2: Twelve-group classification of special educational needs for age 9 (N=8,568)

Medium-risk social, emotional or behavioural difficulties	(7.2%)
High-risk social, emotional or behavioural difficulties	(4.3%)
General learning disabilities or difficulties	(2.9%)
General learning disabilities or difficulties with medium or high risk social, emotional or behavioural difficulties	(1.5%)
Dyslexia	(2.2%)
Dyslexia with medium or high risk social, emotional or behavioural difficulties	(1.2%)
Speech and language difficulties	(1.2%)
Speech and language difficulties with medium or high risk social, emotional or behavioural difficulties	(1.1%)
Autistic Spectrum Disorders	(0.8%)
Physical or sensory disabilities	(0.8%)
Physical or sensory disabilities with medium or high risk social, emotional or behavioural difficulties and/or other general or specific special educational needs(s)	(1.8%)
Multiple or unclassified special educational needs	(2.9%)
No special educational need(s)	(72.2%)

Note. These are weighted percentages (Wave 1 sample weight).

The categories at age 9 were mapped onto the categories at age 13 (Box 2.3), with six categories of special educational needs at age 13. Note there is an additional seventh group used throughout the report (seven-group classification), comprising children with special educational needs at age 9 only, who were not identified as having special educational needs at age 13 (see Box 2.1). The mapping of categories at age 9 onto the six categories at age 13 are as follows:

Box 2.3: Mapping of SEN categories at age 9 to SEN categories at age 13

First report at age 9		Second report at age 13
Medium-risk social, emotional or behavioural difficulties	→	No special educational needs
High-risk social, emotional difficulties	→	Behavioural, emotional or social difficulties
General learning disabilities or difficulties *and* General learning disabilities or difficulties with social, emotional or behavioural difficulties	→	General learning disabilities or difficulties
Dyslexia, dyslexia with social, emotional or behavioural difficulties, speech and language disorder, *and* speech and language disorders with social, emotional or behavioural difficulties	→	Specific learning difficulties or speech and language difficulties
Autistic Spectrum Disorders	→	Autistic Spectrum Disorders
Physical or sensory disability	→	Physical or sensory disability that Impacts on daily life
Physical or sensory disability with medium or high risk BESD and/or other general or specific special educational needs(s), *and* other SEN	→	Multiple or unclassified SEN

The differences in the classification scheme used for the age 9 analysis in the first report and the one used in the present report are as follows:

> *First*, children with medium-risk social, emotional or behavioural difficulties at age 9 have been re-classified as having no special educational needs at age 13.[8]

> *Second*, while the classification scheme at age 9 split out children with particular special educational needs into those with SEN *without* SEBD/BESD and those with SEN *with* SEBD/BESD, the classification scheme at age 13 in this report did not, in the interests of simplifying the overall scheme. So for example, while the scheme in the first report originally included two groups for GLDD (GLDD only and GLDD with BESD), the scheme used in this report has combined these two groups into one.

> *Third*, also in the interests of simplifying the overall scheme, the two categories of specific learning difficulties and speech and language difficulties were combined into a single group, after checking and confirming that these two groups were not significantly different to one another in terms of demographic, socio-economic, educational, and social-emotional characteristics.

Table 2.3 compares the percentages of children in each of six SEN groups[9] at age 9 and 13, that is, by applying SEN categories at age 13 from this report onto the age 9 data. Overall, the estimated prevalence of special educational needs has decreased slightly from age 9 to age 13, from 20.1% to 17.9%. The decrease is not consistent across categories, however. The percentages of children with general learning disabilities or difficulties and multiple or unclassified special educational needs have decreased, while the percentages of children with a specific learning difficulty or speech and language difficulty and with Autistic Spectrum Disorders have increased. The percentages of children with behavioural, emotional or social difficulties and a physical or sensory disability that impacts on daily life between ages 9 and 13 have remained about the same.

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8   The decision to classify children with medium-risk behavioural, emotional or social difficulties in this way was made following discussion with the advisory committee on the study (the composition of which is shown in Appendix 1). The committee was of the view that including these children in the analyses in the present study would run the risk of over-identifying behavioural, emotional or social difficulties to a greater extent than their exclusion would risk their under-identification. Note that excluding medium-risk behavioural, emotional or social difficulties brings the estimated prevalence of SEN at age 9 from 27.8% to 20.6%, which is slightly, but not substantially, higher than the age 13 estimate of 17.9%. This 20.6% is a percentage of all children who took part at age 9. The estimate of 20.6% is slightly higher than the estimate of 20.1% in the second row of Table 2.3 due to attrition (loss) of participants (from 8,568 to 7,525) between ages 9 and 13.

9   Note that the 'multiple/unclassified SEN' category in Table 2.3 includes children with assessed syndromes such as Down or Tourette's, very complex needs, and those identified by parents as having 'other' conditions or disabilities.

Table 2.3: **Comparison of percentages of children with special educational needs at age 9 and 13: children who took part at both ages (N = 7,525)**

Group	% Age 9	% Age 13
Children without special educational needs	79.9	82.1
Children with special educational needs	20.1	17.9
All children (N = 7525)	100.0	100.0
Of those with any SEN…		
Behavioural, emotional and social difficulties	4.1	4.1
General learning difficulties or disabilities	4.0	2.5
Specific learning difficulties or speech and language difficulties	5.8	8.0
Autistic Spectrum Disorders	0.8	1.4
Physical/sensory disabilities that impact on daily life	0.7	0.7
Multiple or Unclassified SEN	4.6	1.3

Note. Data are weighted by the GUI Wave 2 sample weight.

While Table 2.3 suggests a moderate degree of stability in the overall prevalence of various SEN over time, it does not show the stability in classification within individual children over time. In order to examine stability and change within children over time, Table 2.4 shows a cross-tabulation of the SEN of the 842 children who were identified as having special educational needs at *both* ages 9 and 13, i.e. 11.2% of all children who took part in both waves. Note that the total numbers of children with Autistic Spectrum Disorders at age 9 (59) and a physical or sensory disability at age 9 (18) are small. The numbers marked in bold are the percentages of children classified in the same way in both ages 9 and 13. For example, looking at the first row, 50.5% of children with behavioural, emotional or social difficulties at age 9 were also classified as having BESD at age 13.

Table 2.4 shows that while there is some consistency in the classification of special educational needs over time, this varies quite a bit. There are at least four possible reasons for this variation. First, some kinds of special educational needs are developmental in nature and many may change over time. Second, the models of allocation of supports for SEN that are currently in place differ across primary and post-primary schools. For example, so-called 'high incidence needs' – i.e. borderline to mild general learning disabilities and specific learning disabilities – are supported through the General Allocation Model at primary level without a need for a formal diagnosis, while these require a formal diagnosis for resource teaching support at post-primary level at the time of the study (though this is no longer required for this group of students). Third, the classification of children at age 9 in the first report drew on information from teachers *and* parents, while the classification at age 13 used information from parents only, since no teacher-on-pupil questionnaire was administered when children were aged 13. Fourth, there is the possibility of error in parent or teacher responses at one or both waves.

Comparing the SEN classification of children identified as having SEN at both age 9 and 13 shows that:

- SEN classification shows change over time, but the extent and nature of this change depends on the 'initial' classification.

- A majority of children with ASD at age 9 – 85% – remained classified in this group bagb13. The remaining 15% were distributed across BESD, GLDD and SLDD groups.

- Only one in three children with GLDD at age 9 remained in this group at age 13. A considerable percentage of these children – 44% – were classified in the SLDD group at age 13.

- About half of the children with BESD at age 9 were also classified in the BESD group at age 13. Just over a quarter were classified in the SLDD group at age 13, while about one in 10 were classified in the GLDD group at age 13.

- Close to three-quarters of children with SLDD at age 9 remained in this group at age 13, while about 12% were in the GLDD group, and 6% in the ASD group, at age 13.

- 44% of children with a physical or sensory disability at age 9 were also in this group at age 13. About 28% of these children were classified in the SLDD group (due in part to the inclusion of dyspraxia under physical and sensory disabilities in the first report when children were aged 9), and 22% in the multiple or unclassified SEN group, at age 13.

- Just over half of children with multiple or unclassified SEN at age 9 were in the SLDD group at age 13. The remainder were distributed across the other SEN groups.

Table 2.4: SEN classification of children at age 9 and age 13 for children identified with SEN at both ages (N = 842)

'Starting' group at age 9	'Destination' group at age 13						Total	N
	Soc, emot, behave diff	Gen learn dis or diff	Specific learning diff/ speech & lang diff*	Autistic Spec Dis	Phys/ sens disability	Multiple/ unclassified SEN		
Soc, emot, behave diff	**50.5**	8.9	26.7	4.0	1.0	8.9	100.0	101
Gen learn dis or diff	10.7	**33.0**	43.7	4.9	2.9	4.9	100.0	103
Specific learning diff/ speech & lang diff	5.2	11.6	**72.9**	6.1	1.2	3.0	100.0	328
Autistic Spec Dis	5.1	3.4	6.8	**84.7**	0.0	0.0	100.0	59
Phys/sens disability*	0.0	5.6	27.8	0.0	**44.4**	22.2	100.0	18
Multiple/ unclassified SEN	12.0	15.9	53.6	3.0	5.6	**9.9**	100.0	233

* In Wave 1, children with dyspraxia were classified as having a physical or sensory disability, while at 13 in this report, these children were grouped under specific learning difficulty. This accounts for the much higher than expected variation across the age 9 and age 13 classifications for this group.

Note. Data are weighted by the GUI Wave 2 sample weight.

Table 2.5 compares, for all children and separately for boys and girls, the special educational needs of children who had SEN at age 9 only (i.e. those children who, according to our identification method, no longer had special educational needs at age 13) to children who had SEN at age 13 only (i.e. children with more recently identified special educational needs).

Some interesting variations are apparent in the data shown in Table 2.5 for *all* children with special educational needs (top part of the table). For example, it was more common for children with behavioural, emotional or social difficulties to be identified as such at age 9 only or age 13 only than at both ages. This could suggest that some forms of BESD are developmental in nature rather than being of long-term duration.

In the case of general learning disabilities or difficulties, it was more common for children to be classified as having GLDD at age 9 only than at age 13 only, or at both ages. This could be due to subsequent identification of those children as having a specific learning difficulty or speech and language difficulty (as is suggested in the second row of Table 2.4).

The high percentage – 53% – of children with specific learning difficulties or speech and language difficulties at both waves suggests that these conditions may have longer term consequences for children. On the other hand, variations in the classification of children with general learning disabilities or difficulties and specific learning difficulties/speech and language difficulties could also be due to the overlaps in these groups and the use of a teacher-on-child questionnaire when children were 9 years old but not when they were 13 (as noted in the previous section).

The fact that no children with Autistic Spectrum Disorder were identified as having this condition at age 9 only confirms the longer-term needs of children in this group – children identified with Autistic Spectrum Disorders at age 9 retained the same classification at age 13. Table 2.5 also indicates most children with Autistic Spectrum Disorders had been identified by age 9; 10.3% of children retained their diagnosis from age 9 to age 13, while only 3.3% were newly identified between age 9 and 13.

The 5.7% of children with a physical or sensory disability at age 9 only is mainly explained by the fact that children with dyspraxia were included in this group at age 9, but categorised in the specific learning difficulty or speech and language difficulty group at age 13. The fact that a small percentage of children with special educational needs at age 13 only (3.3%) had a physical or sensory disability could relate to conditions or difficulties arising from later developmental processes, and/or trauma or injury.

The fact that no children with Autistic Spectrum Disorder were identified as having this condition at age 9 only confirms the longer-term needs of children in this group – children identified with Autistic Spectrum Disorder at age 9 retained the same classification at age 13. Table 2.5 also indicates that most children with Autistic Spectrum Disorders had been identified by age 9; 10.3% of children retained their diagnosis from age 9 to age 13, while only 3.3% were newly identified between age 9 and 13.

Table 2.5: SEN classification of children with SEN at age 9 only, age 13 only, and at both ages (N = 2018)

Group: all children	% with SEN at Age 9 only	% with SEN at Age 13 only	% with SEN at Ages 9 and 13
Behavioural, emotional or social difficulties	31.0	39.0	13.1
General learning difficulties or disabilities	29.8	12.6	14.4
Specific learning difficulties or speech and language difficulties	16.4	30.9	52.8
Autistic Spectrum Disorders	0.0	3.3	10.2
Physical/sensory disabilities that impact on daily life	5.7	5.5	3.3
Multiple or Unclassified SEN	17.0	8.7	6.0
Total	**100.0**	**100.0**	**100.0**
N	667	509	843
Group: boys	**% with SEN at Age 9 only**	**% with SEN at Age 13 only**	**% with SEN at Ages 9 and 13**
Behavioural, emotional or social difficulties	36.4	33.4	11.4
General learning difficulties or disabilities	24.1	10.9	13.7
Specific learning difficulties or speech and language difficulties	18.9	35.1	52.4
Autistic Spectrum Disorders	0.0	4.0	14.3
Physical/sensory disabilities that impact on daily life	4.8	4.8	2.9
Multiple or Unclassified SEN	15.8	11.7	5.3
Total	**100.0**	**100.0**	**100.0**
N	396	261	504
Group: girls	**% with SEN at Age 9 only**	**% with SEN at Age 13 only**	**% with SEN at Ages 9 and 13**
Behavioural, emotional or social difficulties	23.2	44.9	15.7
General learning difficulties or disabilities	38.1	14.3	15.5
Specific learning difficulties or speech and language difficulties	12.7	26.4	53.5
Autistic Spectrum Disorders	0.0	2.6	4.1
Physical/sensory disabilities that impact on daily life	7.2	6.2	4.0
Multiple or Unclassified SEN	18.9	5.5	7.2
Total	**100.0**	**100.0**	**100.0**
N	271	248	339

Note. Data are weighted by the GUI Wave 2 sample weight.

Key patterns emerging from the data in Table 2.5 are that:

- Of children with SEN at age 9 only, about three in 10 had BESD, three in 10 had GLDD, one in six had SLDD, and one in six had multiple or unclassified SEN.

- Of children with SEN in age 13 only, about two-fifths had BESD, three-tenths had SLDD, and about one in eight had GLDD.

- Of children with SEN at both ages, over 50% had SLDD, while between one in 10 and one in six had BESD, GLDD or ASD.

- These patterns indicate that there are large differences in the compositions of SEN groups, depending on when SEN was identified and its duration.

Comparing the distribution of specific kinds of special educational needs across boys and girls at age 9 only (bottom two sections of Table 2.5), it can be seen that the percentages of boys with behavioural, emotional or social difficulties, and specific learning disabilities or speech and language difficulties are higher than the corresponding percentages for girls. On the other hand, the percentage of girls with general learning difficulties or disabilities at age 9 only was higher than that of boys. Among children with special educational needs at age 13 only, behavioural, emotional or social difficulties were more prevalent among girls than boys, while specific learning difficulties or speech and language difficulties, Autistic Spectrum Disorders, and multiple or unclassified SEN were more prevalent among boys. The distribution of boys and girls across the different groups are broadly similar for children with special educational needs at both ages, except that behavioural, emotional or social difficulties were again somewhat more prevalent among girls, and Autistic Spectrum Disorders were more common among boys.

Finally, it should be noted that, while about two in five of the children with special educational needs at age 9 only (40.6%) and with special educational needs at both ages (40.3%) were girls, about half of the children with special educational needs at age 13 only (48.7%) were girls. The fact that there are comparatively more girls in the age 13 only group, and particularly that 45% of girls with special educational needs at age 13 only were classified as having behavioural, emotional or social difficulties, is noteworthy.

2.4 Provision of support for SEN at age 9 and age 13

2.4.1 Supports for SEN at age 13

In Wave 2 of GUI when children were aged 13, parents were asked whether their child was in receipt of specific kinds of supports, both school-based and out of school. Table 2.6 shows the percentages of children with special educational needs at age 9 only, age 13 only, and at both ages 9 and 13, in receipt of each of these kinds of support *at age 13*. Parents could select as many kinds of support as applied to their child.

Looking at school-based supports first (top part of Table 2.6), 35.6% of all children with SEN at age 9 and/or 13 were in receipt of one or more kinds of school-based supports. The most common kind of support by far was resource teaching or learning support, of which 32.5% of children were in receipt. Looking across the individual columns for school-based support, it can be seen that many more children with special educational needs at ages 9 and 13 (68.1%) were in receipt of one or more of these supports at age 13, than children with special educational needs at age 9 only (2.3%) or at age 13 only (25.5%).

The extremely low rate of school-based supports at age 13 for children with special educational needs at age 9 only is to be expected, but the lower rate of school-based support for children with special educational needs at age 13 only compared to children with special educational needs at both age 9 and 13 may be of concern. Supports may or may not be required for these children with SEN at age 13 only, but this cannot be discerned from the data available.

The bottom half of Table 2.6 shows that fewer children were in receipt of one or more out-of-school supports than school-based supports; 15.5% of all children with special educational needs at either or both ages received out-of-school support, compared to 35.6% of the same group of children receiving school-based supports. Again, the percentage of children with special educational needs at both waves in receipt of one or more out-of-school supports at age 13 (27.2%) is higher than that of children with special educational needs at age 13 only (15.5%) and at age 9 only (0.6%). The bottom half of Table 2.6 also indicates that the low rate of in-school support provision for children with special educational needs at Wave 2 only is not being compensated for by out-of-school supports.

Table 2.6: **School-based and out-of-school supports for children at age 13, by SEN at age 9 only, age 13 only, and SEN at both 9 and 13 (N = 2018; children in post-primary schools only)**

Type of support received at age 13: School-based	SEN Age 9 only	SEN Age 13 only	SEN Ages 9 and 13	All children with SEN Age 9 and/ or 13
Resource Teaching/Learning Support	1.7	22.8	62.4	32.5
Special Needs Assistant	0.1	1.0	15.8	6.9
Technical Assistance	0.1	0.8	3.2	1.6
Visiting Teacher	0.1	1.2	2.1	1.0
Transport Service	0.3	0.7	8.1	3.7
Speech and Language Therapist	0.0	0.8	6.5	2.9
Behavioural Management Programme	0.0	0.3	2.6	1.2
School psychologist	0.3	2.6	8.0	4.1
National Educational Psychological Service	1.0	1.2	6.2	2.8
Children receiving one or more of these supports	2.3	25.5	68.1	35.6
Children receiving none of these supports	97.7	74.5	31.9	64.4
Type of support received at age 13: Out of school	SEN Age 9 only	SEN Age 13 only	SEN Ages 9 and 13	All children with SEN Age 9 and/ or 13
Speech and Language Therapist	0.1	2.4	8.3	4.1
Occupational Therapist	0.0	0.9	6.4	2.9
Physiotherapist	0.1	2.8	3.1	2.0
Psychologist	0.0	4.8	11.1	5.9
Psychiatrist	0.0	2.9	4.8	2.7
Extra tuition/private tuition	0.4	5.8	7.9	4.9
Children receiving one or more of these supports	0.6	15.5	27.2	15.5
Children receiving none of these supports	99.4	84.5	72.8	84.5
N	667	509	842	2018

Note. Data are weighted by the GUI Wave 2 sample weight.

Note that parents could select more than one school-based support and more than one out-of-school support.

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In summary:

- an examination of in-school supports at age 13 shows that while about 36% of all children with SEN (at one or both ages) received in-school supports, this was concentrated among children with SEN at both ages (68%) more so than children with SEN at age 13 only (26%) or SEN at age 9 only (2.3%).

- out-of-school supports at age 13 were received by about one in six children with SEN at one or both ages, and again, this was higher among children with SEN at both ages than children with SEN at one age only.

- very few children with SEN at age 9 only, regardless of SEN category, received support at age 13.

2.4.2 Supports for SEN at age 9

Table 2.7 shows the percentages of children with special educational needs at age 9 only, age 13 only, and at both age 9 and 13, in receipt of each of four kinds of school-based supports[10] at the time of the first report when children were *aged 9*. Unlike the question asked at age 13, the questions put to teachers of children age 9 did not ask about special needs assistants.

The table shows that of all children with special educational needs at either or both ages, 43% were in receipt of one or more school-based supports at age 9. Consistent with age 13 (Table 2.6), the most common type of school-based support was learning support or resource teaching. This percentage varied across the groups shown in the table, however: 65% of children with special educational needs at both ages were receiving one or more school-based supports at age 9, compared to 43% of children who had special educational needs at age 9 only, and 5% of children who had special educational needs at age 13 only.

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[10] Note that when children were aged 9, information on out-of-school supports was not gathered, and information on these supports was asked of teachers (while it was asked of parents when their children were aged 13).

Table 2.7: School-based supports received at age 9, for children with SEN at age 9 only, age 13 only, and SEN at both age 9 and 13 (N = 2018)

Type of support received at Age 9: School-based	SEN Age 9 only	SEN Age 13 only	SEN Ages 9 and 13	All children with SEN Age 9 and/ or 13
Speech therapy	2.0	0.0	5.9	3.1
Psychological assessment	4.7	0.8	20.0	10.1
Behavioural Management Programme	0.6	0.0	3.3	1.6
Learning support/Resource teaching	41.6	5.0	59.7	40.0
Children receiving one or more of these supports	43.1	5.4	65.0	42.7
Children receiving none of these supports	56.9	94.6	35.0	57.3
N	667	509	842	2018

Note that teachers could select more than one school-based support and more than one out-of-school support.

Note. Data are weighted by the GUI Wave 2 sample weight.

In summary, very few children identified with SEN at age 13 only were receiving supports at age 9, and learning support and resource teaching were the most common forms of support.

2.4.3   Continuity in support for SEN from age 9 to age 13

The final part of this section examines *continuity in support*. Due to the way GUI asked questions about supports for children with special educational needs, our comparisons here are limited to those for children who received resource teaching/learning support at age 9 and resource teaching/learning support/special needs assistant support at age 13.

Table 2.8 shows the percentages of children with special educational needs at age 9 only, age 13 only, and at both ages, in receipt of teaching/learning/SNA support at age 9 only, age 13 only, both ages, and at neither age. Here, teaching/learning/SNA support comprises resource teaching or learning support at age 9, and resource teaching, learning support, and special needs assistants at age 13.

Table 2.8: Receipt of teaching/learning support by children at neither age, age 9 only, age 13 only, and both ages, by SEN status at age 13

Continuity in teaching/learning/SNA support	SEN Age 9 only	SEN Age 13 only	SEN Ages 9 and 13	All children with SEN at Age 9 and/ or 13
No support at either wave	58.2	73.8	18.7	45.7
Support at Age 9 only	40.0	2.8	16.0	20.6
Support at Age 13 only	0.1	21.3	21.5	14.3
Support at Ages 9 and 13	1.6	2.2	43.8	19.4
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	667	508	843	2018

Note. Due to differences in the wording of questions across waves of GUI, teaching/learning/SNA support covers resource teaching and learning support at age 9, and resource teaching, learning support, and special needs assistants at age 13. Data are weighted by the GUI Wave 2 sample weight.

The last column of Table 2.8 shows that, of all children with special educational needs at either or both ages, 46% did not receive teaching/learning support at either age 9 or age 13, 21% received support at age 9 only, 14% at age 13 only, and 19% at both ages. Hence there is a large degree of variation in the provision of teaching/learning support for these children.

Looking at the percentages of children who did not receive teaching/learning support depending on whether they had special educational needs at age 9 only, age 13 only, or both ages (first three columns), there is substantial variation. While 19% of children with special educational needs at both ages did not receive teaching/learning support, this figure is much higher for children with special educational needs at age 13 only (74%) and it is 58% for children with special educational needs at age 9 only. However, looking at when the teaching/learning support was provided, it can be seen that 40% of children with special educational needs at age 9 only received teaching/learning support at age 9. Meanwhile, 21% of children with special educational needs received teaching/learning support at age 13 only, and 44% of children with special educational needs received teaching/learning support at both age 9 and 13.

2.4.4   Conclusions – supports for SEN

This broad analysis cannot inform us about the suitability of supports for children, or whether children who were not in receipt of supports could have benefited from them. However, on the basis of parent reports, less than half of the students are in receipt of different forms of support, therefore only benefiting from the skills and knowledge of subject teachers and what they know. If this is an accurate reflection of actual levels of support, it may be insufficient. Children identified as having special educational needs at both age 9 and 13 were the most likely to be in receipt of one or more supports at either age, but there is no information available as to whether these supports are sufficient in quantity and appropriate in kind. The proportion of children with special educational needs identified at age 13 receiving one or more supports at age 13

was lower compared to children identified as having SEN at age 9 and 13. Again, there is no information on when the special educational needs of these children were identified in relation to the timing of the data collection for age 13 (these additional needs could have been identified at any time over the four years since age 9 data collection), whether extra supports would be later provided to these children and how long it would take for the supports to be put in place, and whether any supports they were in receipt of were appropriate and sufficient to meet their needs.

2.5   Guide to interpreting analyses in this report

2.5.1   Overview

This report contains analyses that both describe patterns in the data (*descriptive* statistics, such as frequencies, percentages, and means), and to formally test for statistically significant differences between groups, or to explain variations in those patterns (*inferential* statistics). This section provides an overview of the procedures used to give the non-technical reader the main concepts needed to interpret the results.

Regardless of whether the analyses are descriptive or inferential, we have applied the Wave 2 GUI sample weight when children were age 13. This weight was computed by the GUI research team. Applying this weight corrects for the fact that during Wave 1 there was not an even response rate across important sub-groups such as gender of the child, region of the country, and parental socio-economic status. It also corrects for the fact that not all children who took part at age 9 also took part at age 13. Therefore, by applying the sample weight, we are able to say with some degree of confidence that the results are approximate estimates of the population of 13-year-old children in Ireland.[11]

2.5.2   Rounding

In this report, figures are rounded individually to one decimal point. As a result, some row and column totals do not add up to exactly 100% in all tables, for example Tables 2.2 and 2.4 in this chapter.

2.5.3   Examples of analyses and how to interpret them

In this report, the tables of descriptive statistics which show *frequencies* are in the format shown in the **Example Table 2.9**, with descriptions of each specific part of the table shown below it. This example is from Chapter 3 of this report.

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[11]   The issue of representativeness of the GUI Wave 2 sample in terms of school characteristics is described in Chapter 3, Section 3.2. We examine the impact of losing participants from age 9 to age 13 in Chapter 5, Section 5.2.

Table 2.9: Example table of frequencies (from Chapter 3)

Group	N	Up to lower sec	Upper sec or Tech/Voc	Third level non-degree	Primary degree	Postgrad degree	Total
Children without special educational needs	5504	11.6	33.6	22.5	16.2	16.1	100.0
Children with special educational needs	2019	23.8	33.0	21.0	13.5	8.7	100.0
All children	**7523**	**14.8**	**33.5**	**22.1**	**15.5**	**14.1**	**100.0**
Of those with any SEN...							
Behavioural, emotional or social difficulties	309	35.6	27.2	21.0	11.2	5.0	100.0
General learning difficulties or disabilities	185	30.9	35.7	22.6	5.7	5.0	100.0
Specific learning difficulties or speech and language difficulties	603	20.0	29.6	23.7	15.5	11.2	100.0
Autistic Spectrum Disorders	103	13.4	34.5	18.5	21.7	11.9	100.0
Physical/sensory disabilities that impact on daily life	56	28.7	37.2	18.6	9.4	6.1	100.0
Multiple or Unclassified SEN	95	16.3	34.5	15.2	15.1	18.9	100.0
SEN Age 9 only	668	22.1	37.3	19.5	13.7	7.4	100.0

The top two rows of the table compare children with no SEN and with any SEN. The third row shows the percentages for all children. The seven rows below this show the frequencies for children in each of the seven SEN groups.

For each SEN group, we provide the total number of children for whom data are available. In the third row of this column, we show the weighted total number of respondents. The total is rarely *all* children in Wave 2 (N=7525), since most questions have small percentages of missing data.

Column headings show the category of the question or measure. In this example, each category represents highest level of education attained by parents.

The column total shows that each cell is a row percentage.

Example **Table 2.10** includes the results of formal statistical significance tests between group means, shown by the mean scores marked in bold. This is an example of inferential statistics. Taking the 'Any SEN' group as an example (second row), the mean is 52.3 and is marked in bold. This means that this group has a statistically significantly higher mean than the no-SEN group (which is 49.2). The notes under the table indicate that higher scores on this measure are indicative of lower mood and feelings.

The top two rows of the table compare children with no SEN and with any SEN. The seven rows below this show the frequencies for children in each of the seven SEN groups. The third row shows the percentages for all children.

For each SEN group, we provide the total number of children for whom data are available. In the third row of this column, we show the weighted total number of respondents. The total is rarely all children in Wave 2 (N=7525), since most questions have small percentages of missing data.

This column shows the mean value for each group in question. In this example, the mean of the measure (child's mood and feelings) is 50. Therefore the results for each group can be interpreted as being higher or lower than the overall mean, or than the mean of children with no SEN.

The last column shows the standard deviation, or SD for short. The SD for the whole sample for this measure is 10. This means that about two-thirds of scores are between 40 and 60 points (since the mean is 50), and 95% of scores are between 30 and 70 points. A larger standard deviation implies greater variability. For example, the standard deviation of children with GLDD (14.4) is larger than that for children with no SEN (9.2) meaning that children with GLDD differ more to one another on this measure than do children with no SEN.

Table 2.10: Example table of means and standard deviations (from Chapter 4)

Group	N	Mean	SD
Children without special educational needs	5448	49.19	9.16
Children with special educational needs	1945	**52.26**	11.76
Total	7393	50.00	10.00
Of those with any SEN…			
Behavioural, emotional or social difficulties	292	**55.99**	13.55
General learning difficulties or disabilities	174	**54.17**	14.40
Specific learning difficulties or speech and language difficulties	591	**50.68**	9.59
Autistic Spectrum Disorders	92	**55.80**	11.47
Physical/sensory disabilities that impact on daily life	52	52.49	10.55
Multiple or Unclassified SEN	86	**54.27**	13.87
SEN age 9 only	657	**50.74**	11.16

Refer to the notes under each table for information on the measure and percentage of missing data.

Higher values on the index imply lower mood; lower scores imply better mood.

The table excludes 132 children (1.8%) who do not have data for this question.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01).

Statistical significance

Means marked in bold are statistically significantly different, while those not marked in bold are not significantly different from the no-SEN group mean. To interpret the extent of the differences between mean scores, please refer to Box 2.5 on p.74.

How big is the difference between groups?

The size of differences can be interpreted with reference to the standard deviation: one-fifth to one-third of a standard deviation is 'small to medium'; two-fifths to three-quarters of a standard deviation is 'medium to large'; four-fifths to one standard deviation is 'large'; and more than one standard deviation is a 'very large' difference between groups.

Means marked in bold are statistically significantly different while those not marked in bold are not significantly different from the no-SEN group mean.

Tests of statistical significance are necessary since we are using a sample rather than a population of children and there is some uncertainty around the exact mean that would have been obtained, had we surveyed the population. The tests for statistical significance take this uncertainty into account. Looking at the physical/sensory disability group, it can be seen that the mean score of these children (52.5), although a little higher than the mean score of children without special educational needs (49.2), is not marked in bold. Therefore, due to uncertainty (or sampling and measurement error) we cannot say with confidence that this difference (of about 3.3 score points) is statistically significantly different.[12]

2.5.4 Interpreting differences between groups

The most common kinds of comparisons made in the report are shown in **Example Tables 2.9** and **2.10**. With this kind of presentation of the results, we have various options for making comparisons. To keep the analyses straightforward, the interpretation of results focuses on children without special educational needs and children in the seven SEN sub-groups so as not to focus solely on the top two rows of the tables. Comparing only the top two rows of the tables would result in missing a lot of potentially interesting and policy-relevant variations.

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[12] In tables like these, differences between the any-SEN and no-SEN groups were tested using independent t-tests, and differences between each of the seven SEN groups and the no-SEN group were tested using one-way ANOVAs.

These comparisons generally take two forms in the present report:

1. Comparisons of *mean scores* (for example, on the test of numeric ability): we test whether the mean of children with special educational needs is significantly different from that of children without special educational needs (shown in the bolding of the mean in the second row of Example Table 2.10). We also provide information on whether the mean score of each of the seven SEN groups is significantly different from that of children without special educational needs (as shown in the bolding of some of the means in the bottom portion of Example Table 2.10).

2. Comparisons of the *distribution of responses* (for example, frequency with which parents help children with homework): we test whether the distribution of responses across the no-SEN group (such as the top row of Example Table 2.10) and the seven SEN groups (such as those shown in the bottom portion of Example Table 2.9) differ significantly. The results of this comparison are reported as a chi-square test in the text, which indicates whether 'variation across SEN groups' is statistically significant or not.

Box 2.4 explains the use of p-values (probability values) associated with tests for statistical significance.

Box 2.4: Interpreting p-values (probability values)

When we compare groups in terms of whether they are statistically significant or not, we report *p-values (probability values)*. The usual convention in these kinds of analyses is to interpret a significance test result that has a *p-value of less than .05 as being statistically significant.*

Having $p < .05$ means that the result obtained is 95% unlikely to have occurred by chance.

In the tables, we have marked mean scores of children in each SEN group (compared to the no-SEN group) in **bold** if $p < .01$, that is, if the result is 99% unlikely to have occurred by chance, and they are shaded if $p < .05$ (95% unlikely).

A majority of the results of the chi-square tests have $p < .001$ (99.9% unlikely to have occurred by chance), in other words, the differences in the distributions of responses across categories is highly statistically significant. In *all* statistical tests, if $p > .05$, the difference between groups is *not* considered to be statistically significant.

Given that we are analysing data from a large sample of children (N=7,525), we need to guard against the possibility that we will obtain a statistically significant result which, in reality, has little real or practical importance. This is why we advise readers to take note of the *size* of the difference as well as whether it is statistically significant. The size of the difference in mean scores between groups can be interpreted with reference to the standard deviation as follows (Box 2.5):

Box 2.5: Guidelines for interpreting group differences in mean scores

one-tenth of a standard deviation:	very small difference
one-fifth of a standard deviation:	small difference
one-third of a standard deviation:	medium difference
two-fifths to three-quarters of a standard deviation:	medium to large difference
four-fifths to one standard deviation:	large difference
more than one standard deviation:	very large difference

For the purposes of interpreting the analyses in the present report, 'very small' differences are of little or no practical importance, while 'medium' differences may be of some practical importance, and 'large' to 'very large' differences are likely to be of practical significance.

2.5.5 Scale scores and how to interpret them

Some of the outcomes in the analyses are scale scores. There are two kinds of these scores. In all cases, we have *standardised* the scores. Standardising means that we have set the mean and standard deviation to specific, easy to interpret values to facilitate comparisons between SEN groups.

Achievement scores: children's verbal reasoning and numeric ability test scores in the analyses in this report have been standardised to have a mean of 100 and a standard deviation of 15 across all children who took part in GUI. This means that about two-thirds of children have a score between 85–115 (within one standard deviation of the mean) and about 95% of children have a score between 70–130 (within two standard deviations of the mean).

Questionnaire scales: several parts of the principal, parent and child questionnaires ask sets of related questions. For example, as described in Section 4.2 of Chapter 4, parents were asked a set of questions about their child's adjustment to post-primary school. The responses of these questions were combined to form a scale measuring adjustment to post-primary school.[13] The scale has a mean of 50 and a standard deviation of 10. Therefore about two-thirds of adjustment to post-primary school scale scores have values between 40–60, and about 95% have values between 30–70. *All* questionnaire scales have a mean of 50 and a standard deviation of 10 and were constructed in a similar fashion.

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[13] Specifically, principal components analysis in SPSS 21.0 was used, with checks for factor loadings and scale reliabilities. Principal components analysis looks for an underlying structure in the data, looking for strong patterns of variance. Regression-based scores were generated and standardised to have a mean of 50 and standard deviation of 10.

3.   Children's educational and home contexts at age 13

3.1   Chapter overview

This chapter explores the educational and home environments of children at age 13. There are four aims to the chapter:

- to provide a context in which to interpret children's outcomes.

- to identify aspects of children's environments that may give rise to social and/or educational inequities.

- to examine broad transition pathways of children from primary to post-primary schools.

- to examine the extent to which some aspects of children's home environments have changed or remained stable over time.

Six aspects of children's educational and home environments are examined:

- Demographic and structural aspects of children's school environments

- Climate and resources in children's schools

- School transition pathways of children from age 9 to age 13

- Interactions between parents and schools

- Children's home environments

- Changes in children's home environments between ages 9 and 13.

Within each of these six aspects, we examine one or more characteristics, providing comparisons between children with and without special educational needs. Section 2.5 in Chapter 2 provides information on how to interpret the results in this chapter. At the end of the chapter, a summary of key findings is presented.

3.2   Is the GUI sample representative of the population in terms of school characteristics?

Before presenting results, it is worth considering the extent to which children who participated at age 13 can be considered representative of the population of school-going 13-year-olds, since the sample was initially selected when children were still in primary school.

At age 13, almost all children (98.2%) were in post-primary school; of these, 46.9% were in First Year, and 53.1% were in Second Year. If the distribution of these post-primary-going children in GUI across various school characteristics is similar to that of First and Second Years in the population, then we can be more confident about generalising findings to 13-year-olds and post-primary schools nationally. If there are large differences, however, generalisations to the population would not be warranted.

Table 3.1 compares the population of First and Second Years (for the 2011–2012 school year) with the sample of 13-year-old participants in post-primary schools along several school characteristics. The table indicates that the sample of 13 year olds is similar to the population in terms of how children are distributed across schools by medium of instruction.

However, there are some differences in the percentages of children in the population and the GUI sample which, taken together, suggest that the GUI sample is more socio-economically advantaged than the population. One-fifth (20.5%) of the population is in DEIS schools, which is significantly higher than the 17.9% in the GUI sample. Also, the percentage of children in the GUI sample in fee-paying schools (9.4%) is significantly higher than in the population (7.1%).

There are also some differences by school sector and gender composition. There are significantly more GUI children in all boys' secondary[14] schools and community and comprehensive[15] schools, and significantly fewer GUI children in mixed secondary and ETB (Education and Training Board, formerly vocational[16]) schools, than in the population of First and Second Years.

While there are statistically significant differences between GUI First and Second Years and the population of First and Second Years, they are not very large in size. This indicates that the GUI sample is sufficiently representative of the population to permit broad conclusions to be made, provided that these take the small but statistically significant socio-economic advantage of the sample of 13 year olds into account. A further caveat should be borne in mind when interpreting results on the cognitive tests in particular: while 7,525 of the original 8,658 children took part at age 13, not all of them took the cognitive tests. This is relevant to the results of some of the analyses presented in Chapters 4, 5 and 6.

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14 **Secondary:** In everyday terms, many people use 'secondary' interchangeably with 'post-primary'. However, we use the term 'secondary' to refer to voluntary secondary schools, which may be single-sex or mixed-sex, and which are privately owned and managed.

15 **Community and Comprehensive:** Community and comprehensive schools are managed by Boards of Management of differing compositions.

16 **ETB (Education and Training Boards):** ETB schools are established by the State and administered by Education and Training Boards (formerly Vocational Education Committees, VECs).

Table 3.1: Distribution of the population of First and Second Years (2011–2012) with age 13 participants in First and Second Year by school type/gender composition, medium of instruction, DEIS status and fee-paying status

Characteristic	Population of first and second years (N=121,560)		13-year-old participants in post-primary schools (N=7,379)		Range of percentage in 13-year-old sample taking sampling error into account	
	N	%	N	%	CI Lower	CI Upper
School type/gender mix						
Girls' secondary	24127	19.8	1583	21.5	19.5	23.5
Boys' secondary	19189	15.8	1411	**19.1**	17.1	21.2
Mixed secondary	26155	21.5	1232	**16.7**	14.6	18.8
Community and Comprehensive	15200	12.5	1223	**16.6**	14.5	18.7
ETB	36889	30.3	1930	**26.2**	24.2	28.2
School language						
English	113841	93.7	6889	93.4	92.8	94.0
Irish	4121	3.4	279	3.8	1.6	6.0
Mixed	3598	3.0	210	2.9	0.6	5.2
School DEIS status						
DEIS	24876	20.5	1321	**17.9**	15.6	20.2
Non-DEIS	96684	79.5	6058	**82.1**	81.1	83.1
School fee-paying status						
Fee-paying	8604	7.1	692	**9.4**	7.2	11.6
Non-fee-paying	112956	92.9	6687	**90.6**	89.9	91.3

Figures in bold indicate that the percentage in the GUI sample is significantly different from the percentage in the population (p < .05).

Note. Data from GUI are weighted by the Wave 2 sample weight.

Table 3.1 compared the children in GUI who were in post-primary schools with children in the population. However, some children in GUI were not in post-primary school at age 13. Specifically, 0.9% of children at age 13 were in primary school. This is lower than the estimate of 2.6% of all children aged 13 (Department of Education and Skills[17]), suggesting that this sub-group is slightly under-represented in GUI. A further 0.9% of children in GUI Wave 2 were enrolled in special schools. This is similar to the population percentage estimate of 1.1%.

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[17]   http://www.education.ie/en/Publications/Statistics/Statistical-Reports/.

3.3   Children's school environments at age 13

This section considers aspects of children's school environments. The analyses are descriptive, aimed at giving a sense of the broad educational contexts of children with and without special educational needs at age 13.

The first part of Section 3.3 looks at broad structural and demographic characteristics in order to examine how children with and without SEN are distributed across various school and class types, while the second section looks at schools' climate and resources.

Many of the analyses in this section concern children in post-primary schools only. For most of the characteristics examined, data are only available for post-primary schools. Where the results do not include children in primary and special schools, we note this in the text and tables.

3.3.1   Structural and demographic characteristics of children's schools and classes

3.3.1.1   Year and class level/type

Parents were asked what class their child had started in September 2011. Their responses are shown in Table 3.2 for the various SEN groups. A large majority of children were in First (46.1%) or Second Year (52.1%), with just under 1% in 6th Class and about 1% in a class in a special school.

While no children without special educational needs attended a special school (as would be expected), 3.5% of children with special educational needs did so. A further 2% of children with special educational needs were in 6th class (while just 0.5% without special educational needs were in 6th class). Of the 94.5% of children with special educational needs who were in post-primary schools (top part of Table 3.2), slightly under half was in First Year, and a little over half was in Second Year. Compared to children without special educational needs, children with special educational needs in post-primary schools were more likely to be in First Year than in Second Year.

The lower part of Table 3.2 shows that attendance in special schools by children with special educational needs is largely clustered among children with Autistic Spectrum Disorders, physical or sensory disabilities, and multiple or unclassified SEN. Also, children with general learning disabilities or difficulties, specific learning difficulties or speech and language difficulties, and multiple or unclassified SEN tended to be enrolled in primary schools to a greater extent than other children. Variations in year/class level across the seven SEN groups are statistically significant and likely to be of some practical importance.

Table 3.2: **Distribution of children across year/class level (including primary and special schools), by SEN group**

Group	N	6th Class	First Year	Second Year	Special School[15]	Total
Children without special educational needs	5506	0.5	45.9	53.6	0.0	100.0
Children with special educational needs	2013	2.0	46.5	48.0	3.5	100.0
All children	7519	0.9	46.1	52.1	0.9	100.0
Of those with any SEN...						
Behavioural, emotional or social difficulties	304	1.1	43.6	55.3	0.0	100.0
General learning difficulties or disabilities	185	4.0	45.7	45.8	4.5	100.0
Specific learning difficulties or speech and language difficulties	602	2.6	49.9	44.6	3.0	100.0
Autistic Spectrum Disorders	103	0.0	45.6	34.4	20.0	100.0
Physical/sensory disabilities that impact on daily life	56	0.0	37.5	49.5	13.0	100.0
Multiple or Unclassified SEN	95	6.9	39.1	37.7	16.3	100.0
SEN Age 9 only	667	1.0	47.0	52.0	0.0	100.0

Note. Data are weighted by the Wave 2 sample weight.

$\chi^2 = 939.316$, df = 21, $p < .001$

Of children enrolled in post-primary schools (i.e. 7383 of the 7525 participants), about two-thirds (65.5%) were enrolled in mixed-ability (or randomly allocated) classes, according to parents. A further 21.6% were in higher stream classes, with just under 8% in middle- or lower-stream classes. About 5% of parents were not sure what kind of classroom their child was in, and a very small number – 0.4% – indicated that their child was in a special class (Table 3.3).[19]

While similar percentages were in mixed ability classes, about twice as many children without special educational needs (24.7%) than with special educational needs (12.5%) were in higher stream classes. Conversely, more children with special educational needs (11.9%) than without special educational needs (6.3%) were in middle- or lower-stream classes. Just 1.1% of children with special educational needs were in special classes in post-primary schools.

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[18]   Parents selected the option 'child attends a special school' when asked about the school they will/did attend in September 2011.

[19]   It is perhaps unexpected that 0.1% of children with no SEN were enrolled in a special class as shown in Table 3.3. Nonetheless, we have reported the data as they have been captured in the age 13 GUI database. Moreover, recent research by McCoy *et al.* (2014, Chapter 5) suggests that in 35% of special classes at post-primary level, there are one or more children without special educational needs, but in need of some additional support.

Table 3.3: Distribution of children across type of class, by SEN status – Children enrolled in post-primary schools

Group	N	Special class	Mixed/ Random	Higher stream	Middle stream	Lower Stream	Not sure	Total
Children without special educational needs	5405	0.1	64.6	24.7	5.9	0.3	4.3	100.0
Children with special educational needs	1881	1.1	68.0	12.5	8.7	3.2	6.5	100.0
All children	7286	0.4	65.5	21.6	6.7	1.0	4.9	100.0

Note. Data are weighted by the Wave 2 sample weight.

97 children (1.3%) are missing data for this question. Children not enrolled in post-primary schools (n=142) are not included in the table.

3.3.1.2 School Sector, DEIS, and fee-paying status

Table 3.4 shows the percentages of children enrolled in schools classified by sector and gender composition, including primary and special schools. Overall, 56.5% of children were in secondary schools (whether girls', 21.2%, boys', 18.9%, or mixed, 16.5%), a quarter (25.8%) were in ETB schools, and 16% were in community and comprehensive schools. Less than 1% were in special schools and primary schools.

Fewer children with special educational needs (49.1%) than children without special educational needs (59.2%) were enrolled in secondary schools. A larger percentage of children with special educational needs (29.9%) than without special educational needs (24.3%) were in ETB schools, while similar percentages of children with and without special educational needs (16–17%) were enrolled in community and comprehensive schools. Table A4.1 (Appendix 4) shows the percentages of children across school type/gender composition by specific SEN group.

Table 3.4: Distribution of children across school type and school gender composition (including primary and special schools), by SEN status

Group	N	Girls' Sec	Boys' Sec	Co-ed Sec	ETB	Comm and Comp	Primary School	Special School	Total
Children without special educational needs	5491	22.4	19.7	17.0	24.3	16.2	0.3	0.0	100.0
Children with special educational needs	1990	17.8	16.4	14.9	29.9	16.6	2.3	2.1	100.0
All children	7481	21.2	18.9	16.5	25.8	16.3	0.8	0.5	100.0

Note. Data are weighted by the Wave 2 sample weight.

44 children (0.6%) are missing data for this question.

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Table 3.5 shows, for those children enrolled in post-primary schools, percentages enrolled in DEIS[20] and non-DEIS schools. Of all children, about one in six (17.9%) was in a DEIS school. Proportionately more children with special educational needs – about one in four (24.7%) – were enrolled in DEIS post-primary schools, compared to 15.5% of children without special educational needs. In other words, children with special educational needs were about one-and-a-half times more likely than children without special educational needs to be enrolled in DEIS schools. Table A4.2 (Appendix 4) shows the percentages of children across DEIS and non-DEIS post-primary schools by specific SEN group.

Table 3.5: Distribution of children across DEIS and non-DEIS schools, by SEN status: Children enrolled in post-primary schools

Group	N	Not in DEIS	In DEIS	Total
Children without special educational needs	5475	84.5	15.5	100.0
Children with special educational needs	1904	75.3	24.7	100.0
All children	7383	82.1	17.9	100.0

Note. Data are weighted by the Wave 2 sample weight.

Children not enrolled in post-primary schools (n=142) are not included in the table.

Table 3.6 shows the percentages of children in post-primary schools classified according to whether they were fee-paying or not. Across all children, a little under 10% (9.4%) were in fee-paying schools. Children without special educational needs (10.3%) were more likely than children with special educational needs (6.7%) to be enrolled in fee-paying schools. This variation is statistically significant, but not of large practical importance.

Table 3.6: Distribution of children across fee-paying and non-fee-paying schools, by SEN status: Children enrolled in post-primary schools

Group	N	Non-fee-paying	Fee-paying	Total
Children without special educational needs	5475	89.7	10.3	100.0
Children with special educational needs	1904	93.3	6.7	100.0
All children	7383	90.6	9.4	100.0

Note. Data are weighted by the Wave 2 sample weight.

$\chi^2 = 38.583$, df = 1, p < .001

Children not enrolled in post-primary schools (n=142) are not included in the table.

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[20] DEIS is an initiative (Delivering Equality of Opportunity in Schools) established in 2005 aimed at addressing educational disadvantage. Post-primary schools were allocated to the programme on the basis of medical card data, Junior Certificate examination results, and retention rates. Post-primary schools in DEIS receive additional funding and resources. See www.education.ie.

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3.3.1.3   School language of instruction

Post-primary schools were classified according to whether the language of instruction was through English, Irish, or mixed. Of all children in post-primary schools, most (93.4%) were in English-medium schools, with 3.8% in all-Irish schools and 2.9% in schools with a mixed medium of instruction. Percentages across children with and without special educational needs are very similar and are not statistically significantly different to one another (see Table A4.4 in Appendix 4).

Section 3.3.1 summary: Most children in Wave 2 of GUI were in First Year (46%) or Second Year (52%), with the remaining 2% in primary school or special school. Children with Autistic Spectrum Disorders, physical or sensory disabilities, and multiple or unclassified SEN were more likely than other children to be enrolled in special schools. Primary school enrolment was more prevalent among children with general learning disabilities or difficulties, specific learning difficulties or speech and language difficulties, and multiple or unclassified SEN.

Two-thirds of all 13-year-old children were enrolled in mixed-ability classes. Children with special educational needs were more likely than children without special educational needs to be enrolled in middle- or lower- stream classes. Just over 1% of children with special educational needs were in special classes in post-primary schools.

More children with special educational needs (30%) than without special educational needs (24%) were enrolled in ETB schools. Also, children with special educational needs were more frequently enrolled in DEIS post-primary schools (25%) than children without special educational needs (16%). Consistent with this, fewer children with special educational needs than without special educational needs were enrolled in fee-paying schools. Similar percentages of children with and without special educational needs were enrolled in schools with English, mixed, and Irish languages of instruction.

3.3.2   Resources and climate in children's schools

This section examines various non-structural characteristics of schools that fall under the general headings of resources and climate. The *resource* characteristic that is examined is student-teacher ratio.[21] *Climate* characteristics are principals' estimates of the percentages of children enrolled in the school with literacy and numeracy problems, emotional and behavioural problems, physical/sensory and intellectual disabilities, parental interaction/support, and student engagement/disciplinary climate.

In interpreting these results, it should be borne in mind that some measures are based on principals' subjective perceptions or opinions and, as with any such measures, may be prone to socially desirable or norm-referenced responses.

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[21]   While GUI also gathered information on special educational needs staff, it is not included in this analysis, since the NCSE already has detailed data on this.

3.3.2.1   Resources

Across all children in post-primary schools, the average student-teacher ratio is 14.4 and the average total enrolment is 611 (see Table A4.5 in Appendix 4). Children with special educational needs were in schools which were, on average, slightly smaller in terms of total enrolment size than children with no SEN (about 600 children compared to 615); the student-teacher ratio was also marginally lower (14.27 compared to 14.42). These differences are statistically significant but are unlikely to be of any practical or substantive importance.

3.3.2.2   Climate

3.3.2.2.1   School composition

Principals were asked to estimate the percentages of children in the school with literacy difficulties, numeracy difficulties, and/or emotional and behavioural difficulties. The response options were none, less than 10%, 10–25%, 26–40%, and more than 40%. These responses were collapsed into less than 10%, 10–25% and more than 25% for reporting purposes. These three groups reflect low, medium, and high levels of difficulties estimated in schools, based on the data collected from principals. Table 3.7 shows principals' responses by SEN status.

Table 3.7 indicates that about 10% of children were in schools where principals reported high levels of literacy and numeracy problems, and about 5% of all children were in schools with high levels of emotional and behavioural problems. Here, 'high level' refers to more than one in four students in the school.

There is some evidence of clustering of children with special educational needs in schools with higher levels of these kinds of difficulties. About twice as many children with special educational needs than without special educational needs were enrolled in schools with high levels of literacy difficulties (15.3% vs 8.4%), high levels of numeracy difficulties (15.3% vs 8.3%), and high levels of emotional and behavioural difficulties (8.0% vs 3.6%). Table A4.3 (Appendix 4) shows the distributions of children across schools with varying levels of literacy, numeracy, and/or behavioural problems, by specific SEN group.

Table 3.7: **Percentages of children in schools with various levels of literacy problems, numeracy problems, and emotional or behavioural problems, by SEN status (principals' estimates)**

Group	Literacy problems				
	N	<10%	10-25%	>25%	Total
Children without special educational needs	5289	48.4	43.2	8.4	100.0
Children with special educational needs	1853	41.7	43.0	15.3	100.0
All children	7142	46.7	43.2	10.2	100.0
Group	Numeracy problems				
	N	<10%	10-25%	>25%	Total
Children without special educational needs	5271	47.3	44.3	8.3	100.0
Children with special educational needs	1842	39.9	44.8	15.3	100.0
All children	7113	45.4	44.5	10.2	100.0
Group	Emotional or behavioural problems				
	N	<10%	10-25%	>25%	Total
Children without special educational needs	5254	78.1	18.2	3.6	100.0
Children with special educational needs	1841	71.2	20.7	8.0	100.0
All children	7096	76.3	18.9	4.8	100.0

241 children (3.3%) are missing data on literacy problems, 270 children (3.7%) are missing data on numeracy problems, and 287 children (3.9%) are missing data on emotional and behavioural problems. The table excludes 142 children (1.8%) not enrolled in post-primary schools.

Note. Data are weighted by the Wave 2 sample weight.

The prevalence of the difficulties shown in Tables 3.7 is quite strongly related to school DEIS status. Table 3.8 shows principals' estimates of literacy difficulties, numeracy difficulties, and emotional and behavioural difficulties, by school DEIS status. On each of these three measures, the prevalence of difficulties is markedly higher in DEIS than in non-DEIS schools.

On all three measures (literacy, numeracy, and emotional and behavioural difficulties), there is substantial and highly statistically significant variation[22] between DEIS and non-DEIS schools. The measures of association between the principals' estimates of literacy, numeracy and emotional/behavioural difficulties, range from .40 to .48.[23] This indicates that between 16% and 23% of

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[22] χ^2 linear by linear, p < .001 in all three cases.

[23] as measured by Eta[2].

the variation in the estimated prevalence of these difficulties is explained by school DEIS status, which may be considered moderate to large and substantial.

Table 3.8: Percentages of children in schools with various levels of literacy problems, numeracy problems, and emotional or behavioural problems, by DEIS status (based on principals' estimates)

Literacy difficulties	N	<10%	10-25%	>25%	Total
Not in DEIS	5824	54.6	41.6	3.9	100.0
In DEIS	1318	11.8	50.2	38.0	100.0
Total	7142	46.7	43.2	10.2	100.0
Numeracy difficulties	N	<10%	10-25%	>25%	Total
Not in DEIS	5812	53.0	44.1	2.9	100.0
In DEIS	1301	11.4	46.0	42.6	100.0
Total	7113	45.4	44.5	10.2	100.0
Emotional and behavioural difficulties	N	<10%	10-25%	>25%	Total
Not in DEIS	5796	83.1	15.9	1.0	100.0
In DEIS	1299	46.4	32.3	21.3	100.0
Total	7095	76.3	18.9	4.7	100.0

Note. Data are weighted by the Wave 2 sample weight.

Data are missing for 241 children (3.3%) for the school % of literacy difficulties, for 270 children (3.6%) for numeracy difficulties, and for 288 children (3.9%) for social and emotional difficulties.

Section 3.3.2.2.1 summary: Children in Wave 2 of GUI were enrolled in post-primary schools with an average enrolment size of 611 and an average student-teacher ratio of 14.4. Children with special educational needs were enrolled in schools with enrolment sizes and student-teacher ratios which were similar to (if just slightly smaller than) those of children without special educational needs.

On the basis of principals' reports, about twice as many children with special educational needs than without special educational needs were enrolled in schools with high levels of literacy difficulties, numeracy difficulties, and emotional and behavioural difficulties.

Prevalence of literacy and numeracy difficulties, as well as behavioural, emotional or social difficulties, varied more by DEIS status of post-primary schools than by SEN status of children. In other words, these differences in school composition are much more closely related to the socio-economic characteristics of the children enrolled than the special educational needs' profiles of children.

3.3.2.2.2 Parental involvement and student engagement

School principals were asked whether seven statements relating to parental support or involvement in the school were true of Nearly All, More Than Half, Less Than Half, or Only a Few, parents. The percentages of children whose principals responded Nearly All to four of these statements are shown in Table A4.7 in Appendix 4. Note that these are principals' perceptions and should be interpreted as such.

The responses were combined to these four statements to form an indicator of parental support or involvement in the school.[24] Higher scores indicate more support and involvement, while lower scores indicate lower levels of support or involvement. The mean scores of children in each SEN group are shown in Table 3.9.

Table 3.9: Mean scores of children on the index parental involvement/support for school, by SEN group (children in post-primary schools only)

Group	N	Mean	SD
Children without special educational needs	5157	50.22	9.77
Children with special educational needs	1811	**49.36**	10.62
All children	**6967**	**50.00**	**10.00**
Of those with any SEN...			
Behavioural, emotional or social difficulties	291	**48.00**	10.70
General learning difficulties or disabilities	151	48.91	11.78
Specific learning difficulties or speech and language difficulties	539	49.61	10.71
Autistic Spectrum Disorders	80	52.57	8.81
Physical/sensory disabilities that impact on daily life	47	50.14	11.44
Multiple or Unclassified SEN	70	49.83	9.59
SEN Age 9 only	631	49.38	10.40

Data are weighted by the Wave 2 sample weight.

Notes. Higher values on the index imply more parental support and involvement; lower scores imply less parental support and involvement (principals' reports).

Children not enrolled in post-primary schools (n=142) are not included in the table. The table excludes 416 children (5.6%) whose principals did not respond to one or more questions on parental involvement or support.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01).

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24   The methods used to form this and other similar scales are described in Chapter 2, Section 2.5.5.

There is a small but statistically significant difference between parental involvement/support scores for children with and without special educational needs, this difference is not of practical importance. Children with behavioural, emotional or social difficulties had a mean parental involvement/support score that is about two points lower than children without special educational needs. Otherwise, there are no significant differences in the mean scores on this index between children without special educational needs and children in the various SEN groups.

It should be noted that the difference in parental involvement/support scores between DEIS and non-DEIS schools,[25] is statistically significant (p < .001) and much larger than any of the variations between SEN groups shown in Table 3.9.

The last measure of climate examined here concerns student engagement and disciplinary climate (see Table A4.7 in Appendix 4). Principals were asked how true four statements were in terms of students' engagement and behaviour, with response options True of Nearly All, True for More than Half, and True for Less than Half.

We combined the responses to these four statements to form an indicator[26] of climate of student engagement/behaviour. Higher scores indicate more student engagement and better behaviour, while lower scores indicate lower levels of student engagement and less positive behaviour. The mean scores of children in each SEN group on this index are shown in Table 3.10.

There is a small but statistically significant difference between student engagement/behaviour scores for children with and without special educational needs, but this difference is of little or no practical importance. However, two of the specific SEN groups have mean scores that are significantly lower than children without special educational needs on this index: children with behavioural, emotional or social difficulties and children with multiple or unclassified SEN. Otherwise, there are no significant differences in the mean scores on this index between children without special educational needs and children in the various SEN groups.

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[25] These results are not tabulated, they are just reported in the text.

[26] The standard deviation gives an indication of the distribution of individual scores around the mean. Chapter 2 provides more information.

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Table 3.10: Mean scores of children on the index student engagement/ behaviour, by SEN group (children in post-primary schools only)

Group	N	Mean	SD
Children without special educational needs	5276	50.33	9.60
Children with special educational needs	1844	**49.05**	11.02
All children	**7120**	**50.00**	**10.00**
Of those with any SEN...			
Behavioural, emotional or social difficulties	293	**47.58**	12.37
General learning difficulties or disabilities	162	48.45	11.70
Specific learning difficulties or speech and language difficulties	550	49.90	10.22
Autistic Spectrum Disorders	82	51.36	7.28
Physical/sensory disabilities that impact on daily life	48	47.79	11.76
Multiple or Unclassified SEN	70	**46.48**	12.49
SEN Age 9 only	639	49.24	10.93

Notes. Higher values on the index imply a more student engagement and better behaviour; lower scores imply less student engagement and less positive behaviour (principals' reports).

Children not enrolled in post-primary schools (n=142) are not included in the table. The table excludes 263 children (3.6%) whose principals did not respond to one or more questions on parental involvement or support.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01). Data are weighted by the Wave 2 sample weight.

Similar to parental support/involvement, the difference in student engagement/behaviour scores between DEIS and non-DEIS schools, about 7.3 scale points,[27] is large and statistically significant (p < .001) and again is larger than any of the variations between the SEN groups shown in Table 3.10.

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[27]   These results are not tabulated, they are just reported in the text.

Section 3.3.2.2.2 summary: There is little variation across SEN groups in terms of the extent to which parents are involved in, or support, the school's activities (on the basis of principals' responses), although children with behavioural, emotional or social difficulties had principals who reported slightly lower levels of parental involvement or support than children in other groups. Student engagement or behaviour, as reported by principals, did not vary greatly across SEN groups either, although again was somewhat lower among principals of children with behavioural, emotional or social difficulties, as well as principals of children with multiple or unclassified SEN.

Differences in levels of parental support/involvement and in students' interest/engagement, as reported by principals when children were aged 13, vary much more across DEIS and non-DEIS schools than across SEN status. This suggests that socio-economic factors, rather than the special educational needs profiles of schools, are related to these differences.

3.4   School transition pathways of children from age 9 to age 13

This section considers transition pathways of children between ages 9 and 13 from primary to post-primary school in terms of the school's DEIS status. As well as these more 'typical' transition pathways, the GUI age 13 data shows us that, of the 44 children who were in special schools at age 9 and who took part at age 13, a majority (32, or 73.7%) were also in special schools at age 13. Of the remaining 12 children, 50% were in secondary schools, 33% were in ETB schools, and 17% were in community and comprehensive[28] schools. Five of these 12 children (41.7%) were in DEIS post-primary schools.

Table 3.11 shows transition pathways of children in terms of the DEIS status of primary and post-primary schools. At primary level, DEIS Band 1, Band 2, and Rural groups were combined into a single DEIS classification. Therefore, the four possible pathways are:

- Primary DEIS to post-primary DEIS (8.0% of all children)

- Primary non-DEIS to post-primary non-DEIS (72.5% of all children)

- Primary DEIS to post-primary non-DEIS (9.6% of all children)

- Primary non-DEIS to post-primary DEIS (9.9% of all children).

More children with special educational needs (11.9%) than without special educational needs (6.6%) transitioned from a primary DEIS school to a post-primary DEIS school. Conversely, more children without special educational needs (75.8%) than with special educational needs (63.3%) transitioned from a non-DEIS primary school to a DEIS post-primary school. Children with SEN were more likely than children without SEN *both* to transition from a non-DEIS primary school to a DEIS post-primary school and from a DEIS primary school to a non-DEIS post-primary school.

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28   See the Glossary for a further explanation of these terms.

Looking at the specific SEN groups (bottom part of Table 3.11), children with behavioural, emotional or social difficulties and physical or sensory disabilities more commonly transitioned from a DEIS primary school to a DEIS post-primary school. Also, just 47.4% of children with behavioural, emotional or social difficulties were in non-DEIS schools at both primary and post-primary levels, which is much lower than children with Autistic Spectrum Disorders (76.8%) and multiple or unclassified SEN (78.4%).

Table 3.11: **Transition pathways from primary to post-primary schools, by primary and post-primary school DEIS status and SEN group**

| Group | N | Primary: Not DEIS | | Primary: DEIS | | Total |
		Post-primary: Not DEIS	Post-primary: DEIS	Post-primary: Not DEIS	Post-primary: DEIS	
Children without special educational needs	5475	75.8	8.9	8.7	6.6	100.0
Children with special educational needs	1905	63.3	12.8	11.9	11.9	100.0
All children	**7380**	**72.5**	**9.9**	**9.6**	**8.0**	**100.0**
Of those with any SEN…						
Behavioural, emotional or social difficulties	302	47.4	15.6	17.5	19.5	100.0
General learning difficulties or disabilities	169	58.4	17.8	14.6	9.2	100.0
Specific learning difficulties or speech and language difficulties	569	64.1	13.5	10.5	11.8	100.0
Autistic Spectrum Disorders	82	76.8	11.0	8.5	3.7	100.0
Physical/sensory disabilities that impact on daily life	50	62.0	14.0	6.0	18.0	100.0
Multiple or Unclassified SEN	74	78.4	6.8	2.7	12.2	100.0
SEN Age 9 only	659	67.1	10.2	12.6	10.2	100.0

The table excludes 142 children (1.8%) who were not in post-primary schools at age 13.

Note. Data are weighted by the Wave 2 sample weight.

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3.5 Demographic and socio-economic aspects of children's home environments

This section examines students' individual demographic and socio-economic environments, focusing on the following:

- Household composition

- Parental occupation and education

- Family social welfare dependence

- Parents' perceived financial stress.

3.5.1 Household composition

Information collected from parents when their children were aged 13 permitted children's families to be grouped according to whether they were one-parent with 1–2 children, one-parent with 3 or more children, two-parent with 1–2 children, or two-parent with 3 or more children.[29]

Household composition of the children by SEN status is shown in Table 3.12. Across all children, about one in eight (12.9%) was in a family with one parent and one or two children, while 6.4% were in a family with one parent and three or more children. About 81% were in families with two parents, 42.6% of these with one or two children, and 38.2% with three children or more.[30] Figure 3.1 shows the percentages of children in each SEN group in one- and two-parent families.

Table 3.12: Distribution of children across household composition, by SEN status

Group	N	One parent, 1–2 children	One parent, 3+ children	Two parents, 1–2 children	Two parents, 3+ children	Total
Children without special educational needs	5506	11.2	5.1	43.8	39.9	100.0
Children with special educational needs	2019	17.4	9.9	39.3	33.5	100.0
All children	7525	12.9	6.4	42.6	38.2	100.0

Note. Data are weighted by the GUI Wave 2 sample weight.

$\chi^2 = 149.646$, df = 7, p < .001.

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[29] Within this broad classification there are likely to be mixed families, foster families, and other less prevalent family configurations.

[30] In 91.1% of two-parent families, the biological father resided; in the remaining 8.9% of two-parent families, the father was not the biological father of the Wave 2 participating child.

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Figure 3.1: Distribution of children across one- and two-parent families, by SEN group
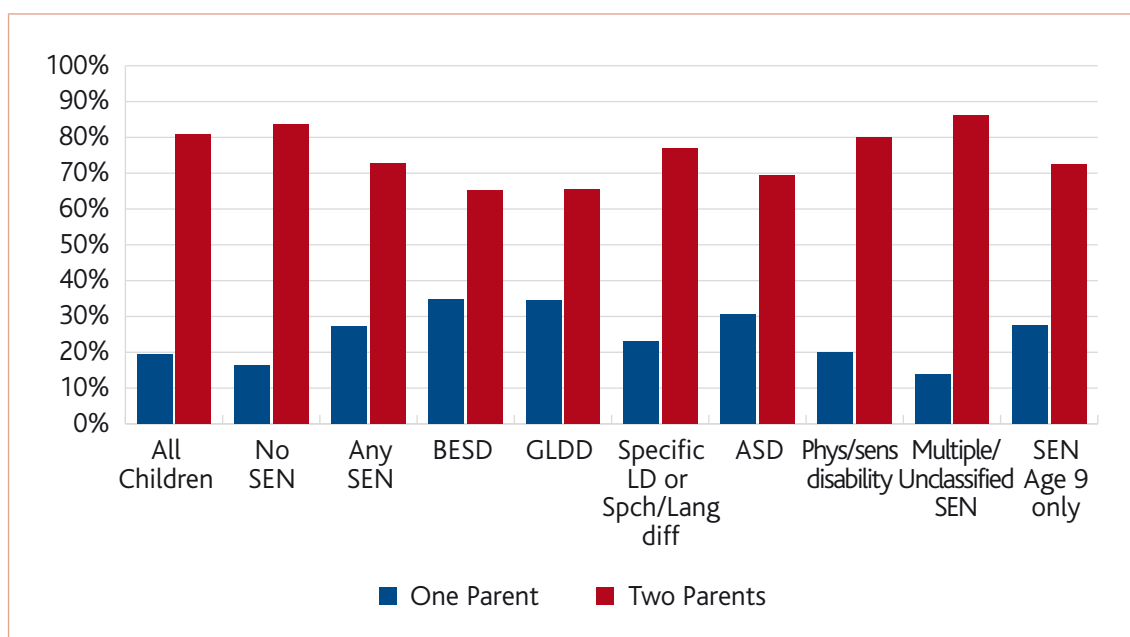
The results show that one-parent families are more prevalent among children with special educational needs (27.3%) than children without special educational needs (16.3%). One-parent families were particularly prevalent among children with behavioural, emotional or social difficulties (35.7%), general learning disabilities or difficulties (34.5%), and Autistic Spectrum Disorders (30.6%). On the other hand, 80% or more of children with multiple or unclassified SEN and physical or sensory disabilities were in two-parent families.

The variation in one-/two-parent family status across SEN groups is statistically significant, and the variations across groups are quite large.

3.5.2   Parental education and occupation, social welfare dependence and financial stress

This section examines four measures of what is generally termed 'socio-economic status' – parental education and occupation, percentage of household income from social welfare, and parents' perceptions of financial stress. These measures are inter-related but not exactly the same. The review of literature in Chapter 1 has illustrated the two-way relationship between financial resources and special educational needs, while inequities in parents' levels of education and occupation that are evident across families of children with and without special educational needs should be interpreted in the context of wider social and economic inequities.

3.5.2.1 Parental education

Both parents were asked the highest level of education that they had attained. Where both parents responded, the higher of the two levels was taken as a measure of parental education. The percentages of children whose parents attained various educational levels are shown in Table 3.13 and in Figure 3.2.

The parents of about 15% of all children had attained up to lower second-level education, while close to 30% had attained a primary or postgraduate degree. The remaining 55% had completed upper secondary, technical or vocational training, or a third-level non-degree education programme.

The parents of children with special educational needs had lower average educational attainment than parents of children without special educational needs (Table 3.13). For example, close to 24% of the parents of children with special educational needs had completed up to lower second-level education, compared to 11.6% of parents of children without special educational needs.

Parental levels of education varied across the specific SEN groups (Figure 3.2), being lowest among children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, and physical or sensory disabilities, and highest among parents of children with multiple or unclassified SEN, Autistic Spectrum Disorders, and specific learning difficulties or speech and language difficulties.

The variation in parental levels of education across SEN groups is large, and statistically significant.

Table 3.13: Parental educational attainment, by SEN status

Group	N	Up to lower sec	Upper sec or Tech/ Voc	Third level non-degree	Primary degree	Postgrad degree	Total
Children without special educational needs	5504	11.6	33.6	22.5	16.2	16.1	100.0
Children with special educational needs	2019	23.8	33.0	21.0	13.5	8.7	100.0
All children	7523	14.8	33.5	22.1	15.5	14.1	100.0

Note. Data are weighted by the GUI Wave 2 sample weight.

χ^2 linear by linear = 92.491, df = 1, p < .001

Figure 3.2: Parental educational attainment, by SEN group

SEN group	Up to lower sec	Upper sec of 3rd level non-degree	Degree
SEN Age 9 only	22.1	56.8	21.1
Multiple/ Unclassified SEN	16.3	49.7	34
Phys/sens disability	28.7	55.8	15.5
ASD	13.4	53	33.6
Specific LD or Spch/ Lang diff	20	53.3	26.7
GLDD	30.9	58.4	10.7
BESD	35.6	48.2	16.2
Any SEN	23.8	54	22.2
No SEN	11.6	56.1	32.3
All children	14.8	55.7	29.5
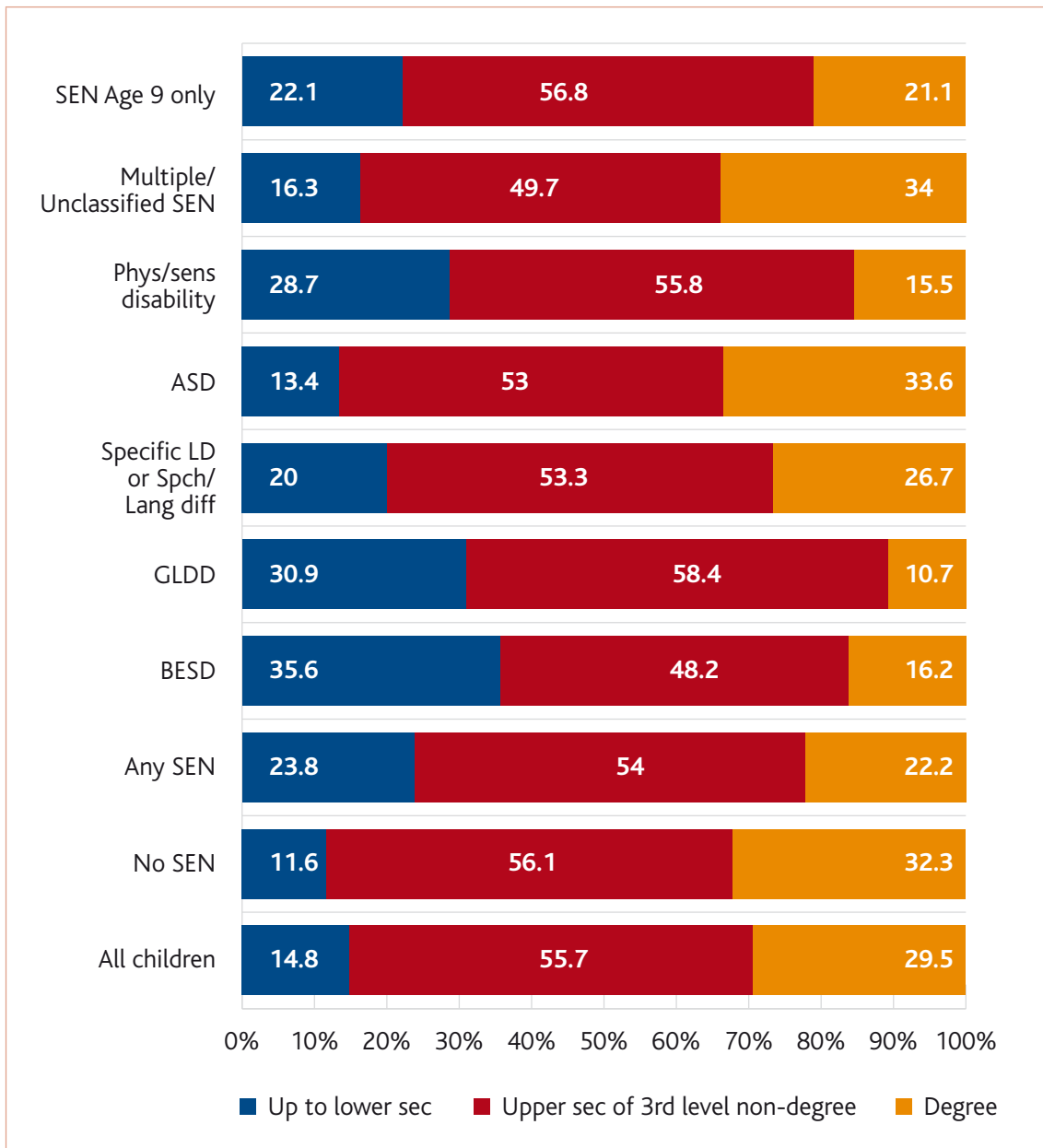
3.5.2.2　Parental occupation

Table 3.14 shows socio-economic index (SEI) scores of children's families.[31,32] Higher scores indicate higher levels of socio-economic advantage, and *vice versa*. Parents of children with special educational needs had a mean SEI score that is about three points lower than children without special educational needs (see Table 3.14), and this difference is statistically significant and moderate in nature.

Across specific SEN groups, there are differences between these groups in average levels of socio-economic (dis)advantage. Scores of children with general learning disabilities or difficulties (45.0), behavioural, emotional or social difficulties (46.6), and physical or sensory disabilities (46.4) are lowest compared to the mean score of children without special educational needs. In contrast, the mean SEI scores of children with Autistic Spectrum Disorders (48.7) and multiple or unclassified SEN (49.4) are statistically the same as children without special educational needs.

The pattern of SEI score differences is similar to the differences in levels of parental education shown in Table 3.13 and Figure 3.2.

Table 3.14:　Parental socio-economic index (SEI) scores, by SEN group

Group	N	Mean	SD
Children without special educational needs	5312	50.80	9.92
Children with special educational needs	1865	**47.73**	9.89
All children	**7178**	**50.00**	**10.00**
Of those with any SEN...			
Behavioural, emotional or social difficulties	259	**46.64**	10.41
General learning difficulties or disabilities	164	**44.99**	9.74
Specific learning difficulties or speech and language difficulties	577	**48.27**	9.66
Autistic Spectrum Disorders	99	48.72	10.45
Physical/sensory disabilities that impact on daily life	56	**46.38**	9.14
Multiple or Unclassified SEN	93	49.41	10.68
SEN Age 9 only	618	**48.12**	9.64

The table excludes 347 children (4.6%) who are missing data on parental occupation.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01).

Note. Data are weighted by the Wave 2 sample weight.

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[31]　The GUI dataset contains information on mothers' and fathers' present or prior occupations, which are coded using an in-depth coding frame, ISCO-2008 (International Standard Classification of Occupations, 2008 version; www.ilo.org). We have mapped these codes onto the International Socio-Economic Index (ISEI) scale, using methods developed by Ganzeboom and colleagues (see http://www.harryganzeboom.nl/ISCO08/index).

[32]　The methods used to form this and other similar scales are described in Chapter 2, Section 2.5.4.

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3.5.2.3   Percentage of income from social welfare

Parents were also asked to estimate the percentage of total household income that was from social welfare payments (of *any* kind, including child benefits). Table 3.15 compares the responses to this question across children with and without SEN (and is shown for the specific SEN groups in Figure 3.3). Across all children, about half (51.3%) lived in families with 5% or less of household income from social welfare payments, about one in three children were in families with between 5% and 49% of household income, and 17.3% where 50% or more of household income was from social welfare payments. Of this last group, close to one in 10 children were in households where parents indicated that 100% of income was from social welfare sources.

Comparing children with and without special educational needs (Table 3.15), social welfare dependence is higher among families of children with special educational needs. For example, close to twice as many children with special educational needs (14.1%) than without special educational needs (7.4%) lived in families where 100% of household income was from social welfare payments. Social welfare dependence was particularly high among families of children with behavioural, emotional or social difficulties (Figure 3.3).

Variations in social welfare payments as a percentage of household income vary significantly across SEN groups. These differences are likely to be of substantive importance, particularly in the case of the families of children with behavioural, emotional and social difficulties.

Table 3.15: Percentage of household income from social welfare payments (including child benefits), by SEN status

Group	N	Less than 5%	5-19%	20-49%	50-99%	100%	Total
Children without special educational needs	5441	55.6	22.5	7.8	6.7	7.4	100.0
Children with special educational needs	1991	39.6	23.9	10.6	11.8	14.1	100.0
All children	7433	51.3	22.8	8.6	8.1	9.2	100.0

92 children (1.2%) are missing data for this question.

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 74.399, df = 1, p < .001

Figure 3.3: **Percentage of household income from social welfare payments (including child benefits), by SEN group**
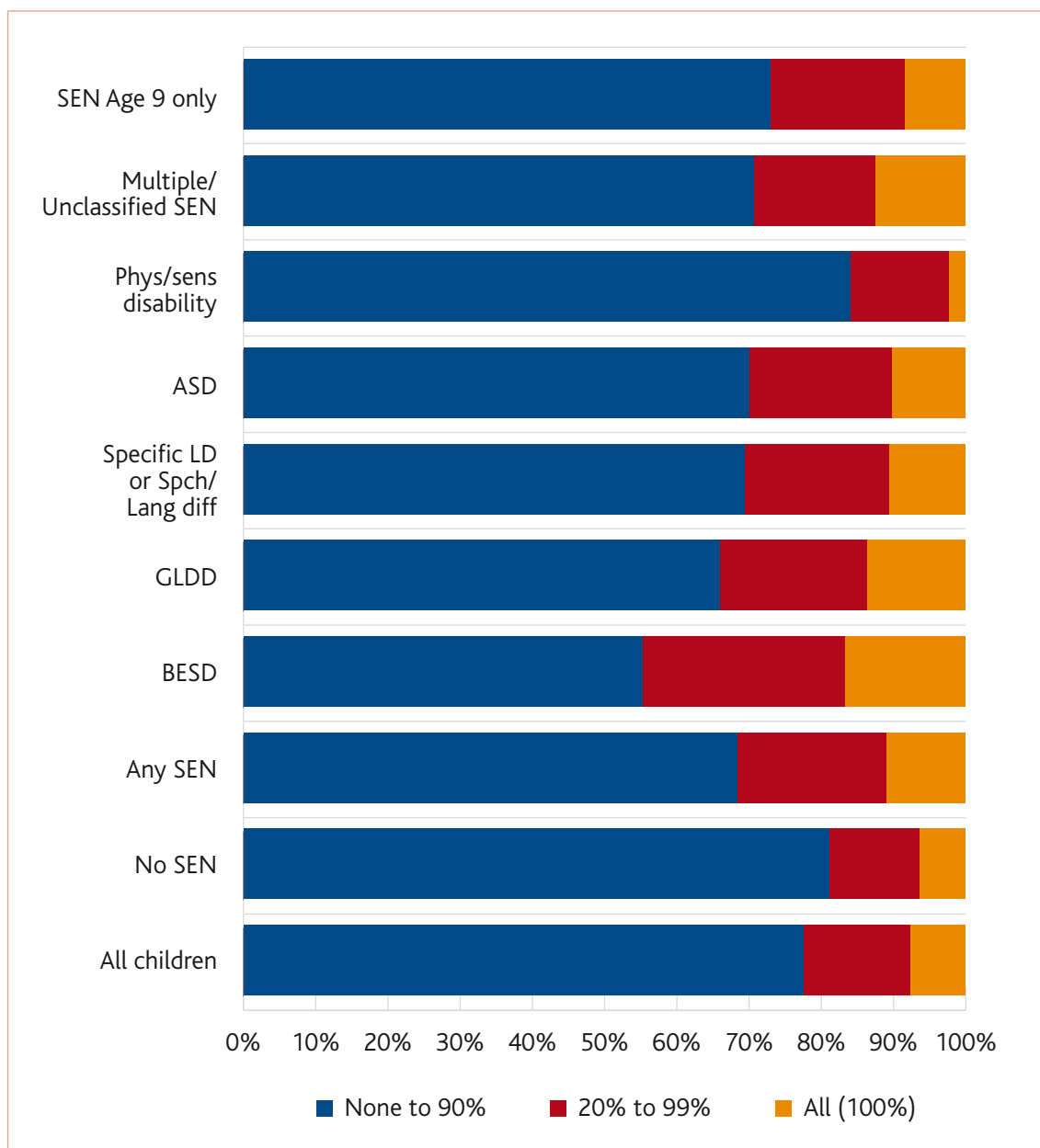
It is important to note that the *reasons* for social welfare dependence have not been examined here. For example, some families may have a higher reliance on social welfare because of higher care-giving demands being placed on them by their children or other family members.

3.5.2.4   Parents' perceptions of financial stress

The fourth and final measure of socio-economic context examined in this section is parents' perceptions of financial stress. Parents were asked the degree of ease or difficulty with which they were able to make ends meet, with response options ranging from With Great Difficulty to Very Easily. Table 3.16 shows the results for families of children with and without SEN, with response options Easily and Very Easily combined for reporting purposes. Figure 3.4 shows these results by the specific SEN groups, with categories combined further.

Across all children, close to one in four (23.1%) were in families with parents reporting great difficulty (9.5%) or difficulty (13.6%) in making ends meet, while about two in five children (39.1%) were in families with parents reporting that they were able to make ends meet fairly easily (26.9%) or (very) easily (12.2%).

While about 30.7% of children with special educational needs were in families reporting great difficulty or difficulty in making ends meet, this was lower among families of children without special educational needs, at 20.3% (Table 3.16). Difficulty in meeting monthly living expenses was highest among families of children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, and Autistic Spectrum Disorders (Figure 3.4).

Variations in social welfare payments as a percentage of household income vary significantly across SEN groups, and are likely to be of practical importance.

Table 3.16: Parents' reports of difficulty in making ends meet, by SEN status

Group	N	Great difficulty	Difficulty	Some difficulty	Fairly easily	Easily or very easily	Total
Children without special educational needs	5502	7.7	12.6	37.5	29.2	12.9	100.0
Children with special educational needs	2016	14.5	16.1	38.4	20.5	10.4	100.0
All children	7518	9.5	13.6	37.7	26.9	12.2	100.0

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 46.808, df = 1, p < .001

Figure 3.4: Parents' reports of ease or difficulty in making ends meet, by SEN group

SEN group	Great difficulty or difficulty	Some difficulty	Fairly easily, easily or very easily
SEN Age 9 only	25.2	39.6	35.2
Multiple/Unclassified SEN	32	32.6	35.4
Phys/sens disability	29.1	32.6	38.3
ASD	40.8	28.3	30.9
Specific LD or Spch/Lang diff	27.5	40.4	32.1
GLDD	37.2	41.7	21.1
BESD	41.3	36	22.7
Any SEN	30.7	38.4	30.9
No SEN	20.3	37.5	42.1
All children	23.1	37.7	39.2

Legend:
■ Great difficulty or difficulty ■ Some difficulty ■ Fairly easily, easily or very easily

Section 3.5.2 summary: This section examined four measures that are included under the more general heading of 'socio-economic status': parental education and occupation, social welfare dependence, and financial stress. The families of children with special educational needs had significantly worse outcomes on all four of these measures. However, there are some differences, depending on the measure considered.

Levels of parental education and occupation were lowest among families of children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, and physical or sensory disabilities, while they were higher among parents of children with multiple or unclassified SEN, Autistic Spectrum Disorders, and specific learning difficulties or speech and language difficulties.

Social welfare dependence and financial stress were highest among families of children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, and Autistic Spectrum Disorders. They were slightly higher among families of children with physical or sensory disabilities, specific learning difficulties or speech and language difficulties, and SEN at age 9 only. Families of children with behavioural, emotional or social difficulties had markedly higher levels of social welfare dependence than families of the children in the other groups examined.

3.6 Stability and change in children's home environments from age 9 to age 13

This section compares some aspects of children's home environments between age 9 and 13, to provide some indication as to whether household composition and socio-economic characteristics are stable or lasting features of children's environments. The results have potential implications both in identifying groups of children who may be more and less vulnerable to social and economic change, as well as providing information on the stability of social and economic characteristics over time more generally. It should be borne in mind that Wave 1, when children were 9 years old, coincided with the beginning of the widespread effects of Ireland's economic crisis (2007–2008), while Wave 2 (2011–2012), when children were 13 years old, coincided with a time when many families were experiencing the depths of this crisis.

3.6.1 Household composition between age 9 and 13

Table 3.17 compares the household composition of children between age 9 and 13. Children are grouped according to whether they were in a two-parent family at both ages, a one-parent family at both ages, or whether there was a change in household composition during this time (from one- to two-parent, or from two- to one-parent). The last two columns of Table 3.17 therefore give an indication of the percentage of children who are likely to have experienced significant changes in family life between age 9 and 13.

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Across all children, 77.5% were in two-parent families at both ages, while 14.6% were in one-parent families at both ages. About 3% of children were in a one-parent family at age 9, and a two-parent family at age 13, while 4.7% were in a two-parent family at age 9, and a one-parent family at age 13. Therefore 7.9% of all children who participated in GUI at both ages experienced this type of significant change in family life between the ages of 9 and 13.

The percentages of children experiencing these changes varies across children with and without special educational needs (Table 3.17): 6% of children without special educational needs experienced changes in the numbers of parents in the family, compared to 12% of children with special educational needs. Changes in family structure were particularly prevalent among children with behavioural, emotional or social difficulties (20.4%; bottom part of Table 3.17). Overall, the table demonstrates both the higher prevalence of one-parent families, as well as higher rates of change in family structure, among children with special educational needs, compared to children without special educational needs. Variations in changes/stability in one- and two-parent status across SEN groups are quite large, and statistically significant.

Table 3.17: Household composition (one- and two-parent families) at age 9 and 13, by SEN group

Group	N	Two parent family both ages	One parent family both ages	One parent age 9, two parent age 13	Two parent age 9, one parent age 13	Total
Children without special educational needs	5507	81.0	12.7	2.7	3.6	100.0
Children with special educational needs	2018	68.1	19.9	4.7	7.4	100.0
All children	**7525**	**77.5**	**14.6**	**3.2**	**4.7**	**100.0**
Of those with any SEN...						
Behavioural, emotional or social difficulties	308	54.5	25.0	10.7	9.7	100.0
General learning difficulties or disabilities	186	61.8	26.3	3.8	8.1	100.0
Specific learning difficulties or speech and language difficulties	602	73.6	17.1	3.3	6.0	100.0
Autistic Spectrum Disorders	104	68.3	23.1	1.0	7.7	100.0
Physical/sensory disabilities that impact on daily life	56	80.4	8.9	0.0	10.7	100.0
Multiple or Unclassified SEN	95	81.1	10.5	5.3	3.2	100.0
SEN Age 9 only	667	68.5	19.8	4.0	7.6	100.0

Note. Data are weighted by the Wave 2 sample weight.

$\chi^2 = 243.212$, df = 21, p < .001

3.6.2   Socio-economic characteristics between age 9 and 13

As one might expect, parental education remained quite stable across Waves 1 and 2. Of all children, 95.4% of parents reported consistent[33] levels of education across Waves 1 and 2. Also, SEI scores remained relatively stable[34] between SEI scores of children at age 9 and 13.

Examining changes in levels of financial stress can give an indication as to whether or not children's home environments have remained the same, improved, or worsened with respect to their family's financial circumstances. To compare parents' reports of financial stress, we computed the difference in reports of difficulty in making ends meet. Table 3.18 shows the results. Children were grouped into three categories, depending on parents' responses at both waves: no change in levels of financial stress, a worsening of financial stress, or an easing of financial stress.

Across all children a sizeable percentage (43.5%) were in families that reported a worsening of financial stress, 50.2% of children were in families with no changes in levels of financial stress, and improvements were reported by parents of just 6.4% of children.

Table 3.18: Changes in levels of financial stress reported by parents, at age 9 and 13, by SEN group

Group	N	Worsening of financial stress	Same level of financial stress	Easing of financial stress	Total
Children without special educational needs	5500	42.7	52.0	5.3	100.0
Children with special educational needs	2015	45.6	45.1	9.3	100.0
All children	**7515**	**43.5**	**50.2**	**6.4**	**100.0**
Of those with any SEN…					
Behavioural, emotional or social difficulties	309	50.1	38.6	11.3	100.0
General learning difficulties or disabilities	185	55.6	39.4	5.1	100.0
Specific learning difficulties or speech and language difficulties	600	46.3	42.9	10.8	100.0
Autistic Spectrum Disorders	103	47.0	47.4	5.5	100.0
Physical/sensory disabilities that impact on daily life	56	32.3	59.7	8.0	100.0
Multiple or Unclassified SEN	95	45.5	50.2	4.4	100.0
SEN Age 9 only	667	41.0	49.5	9.5	100.0

Note. Data are weighted by the Wave 2 sample weight.

χ^2 = 90.876, df = 14, p < .001

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33   Here, 'consistent' means within one education level.

34   Correlation of .61 (p < .001).

Looking at the top part of the table at the percentages of children with and without special educational needs, there is slightly more variation in the changes in financial stress of parents of children with special educational needs, with slightly more parents of children with special educational needs than without special educational needs experiencing both a worsening *and* an improvement in levels of financial stress.

Looking at the specific SEN groups (bottom part of Table 3.18), parents of children with behavioural, emotional or social difficulties and general learning disabilities or difficulties tended to experience a worsening of levels of financial stress to a greater extent than parents of children in the other SEN groups. Variations in changes in levels of parental financial stress varied moderately though significantly across SEN groups.

3.7 Parental involvement

This section examines parental involvement with their child's homework, and also with their child's school.

3.7.1 Parental involvement in homework

Parents were asked about the frequency with which they helped their child with homework, and, if they rarely or never helped their child, the reasons for this. Frequency of parental help with homework across SEN groups is shown in Table 3.19.

Across all children, 23% of parents always or regularly helped with homework, 39% helped now and again, and 38% rarely or never helped. Parental help with homework was more frequent among children with special educational needs than children without special educational needs.

Table 3.19: Frequency of parental help with homework, by SEN group

Group	N	Always/ Regularly	Now and again	Rarely/ Never	Total
Children without special educational needs	5425	20.9	39.3	39.8	100.0
Children with special educational needs	1901	30.1	37.5	32.4	100.0
All children	**7326**	**23.2**	**38.8**	**37.9**	**100.0**
Of those with any SEN...					
Behavioural, emotional or social difficulties	293	16.6	46.8	36.3	100.0
General learning difficulties or disabilities	175	45.3	32.1	22.6	100.0
Specific learning difficulties or speech and language difficulties	564	36.8	35.6	27.6	100.0
Autistic Spectrum Disorders	88	51.2	16.3	32.6	100.0
Physical/sensory disabilities that impact on daily life	54	24.2	31.9	43.9	100.0
Multiple or Unclassified SEN	89	44.9	20.0	35.2	100.0
SEN Age 9 only	638	21.5	42.2	36.3	100.0

The table excludes 199 children (2.6%) whose parents did not respond to the question on help with homework.

Note. Data are weighted by the Wave 2 sample weight.

$\chi^2 = 212.764$, df = 14, p < .001

There is variation across the seven SEN groups shown in the bottom part of Table 3.19, and this is both substantial, and statistically significant. Groups most frequently receiving help from their parents with homework were children with general learning disabilities and difficulties, Autistic Spectrum Disorders, and multiple or unclassified SEN. For each of these three groups, 45% or more of parents reported always or regularly helping with homework. In contrast, a quarter or less of parents in a further three groups (BESD, physical or sensory disabilities, and SEN at age 9 only) reported always or regularly helping with homework.

For children whose parents rarely or never helped with homework (i.e. the 37.9% of children represented in the last column of Table 3.19), the main reason given by 79% of parents was that help was not needed, while a further 14.4% of parents said that the child did not want help. Small percentages of parents indicated that they were unable to help (2.7%) or that someone else helped their child with homework (3.8%). Table A4.8 in Appendix 4 provides information on reasons why parents did not help with homework.

There are some interesting differences between children with and without special educational needs (Table A4.8 in Appendix 4), parents of children without special educational needs reported that help was not needed more frequently (83.8%) than parents of children with special educational needs (62.7%). In contrast, parents of children with special educational needs indicated that their child did not want help about twice as frequently (24.7%) as parents of children without special educational needs (11.5%).

There is also considerable variation across SEN groups in the reasons why parents do not help with homework, and these are statistically significant. For example, relatively high percentages of parents of children with SEN at age 9 only and physical or sensory disabilities indicated that their child did not need help. Also, 28–30% of parents of children with behavioural, emotional or social difficulties, specific learning difficulties or speech and language difficulties, Autistic Spectrum Disorders, and multiple or unclassified SEN, indicated that their child did not want help with homework.

Taking the information in Tables 3.19 and A4.8 (Appendix 4) together, one group of children stands out as having relatively infrequent parental help with homework coupled with relatively high rates of the child not wanting help, which may indicate difficulties in helping: these were children with behavioural, emotional or social difficulties. Other groups of children with relatively low frequencies of parental help with homework (i.e. SEN at age 9 only and physical or sensory disabilities) had relatively high percentages of parents indicating that their child did not need help.

3.7.2   Parental involvement in school

Parents were asked whether, over the past 12 months, they had attended a parent-teacher meeting, been to a concert, play or other school event, been to see the principal or a teacher about their child's behaviour or school performance, or spoken to the principal or a teacher on the phone about their child's behaviour or school performance. The frequency with which parents reported doing each of these is shown in Table 3.20. Earlier, we looked at interactions of parents with the school, from the school principal's point of view (Table 3.9). Those measures *cannot* meaningfully be compared with the results in this section, since the focus of the question asked of principals was on parental support for and involvement with the school, while the results in this section relate to more specific parental behaviours related to individual children.

Table 3.20: Percentages of parents reporting four kinds of interaction with their child's school over the past 12 months, by SEN group

Group	N	Attended parent-teacher meeting	Been to school event	Been to see principal or teacher	Phoned principal or teacher
Children without special educational needs	5490	89.0	63.7	16.2	12.9
Children with special educational needs	1994	85.8	57.3	42.3	36.6
All children	**7484**	**88.2**	**62.0**	**23.1**	**19.2**
Of those with any SEN…					
Behavioural, emotional or social difficulties	293	88.0	49.2	58.0	52.0
General learning difficulties or disabilities	185	83.5	57.1	54.7	46.2
Specific learning difficulties or speech and language difficulties	600	86.5	59.4	46.8	43.0
Autistic Spectrum Disorders	102	86.4	66.8	70.8	53.8
Physical/sensory disabilities that impact on daily life	56	92.0	55.6	36.3	22.4
Multiple or Unclassified SEN	91	84.9	74.7	41.9	39.8
SEN Age 9 only	667	84.4	55.3	24.2	19.3

Note. Data are weighted by the Wave 2 sample weight.

41 children (0.5%) are missing data for this question.

Across all children, 88% of parents had attended a parent-teacher meeting in the past 12 months, while 62% had been to a school event. Smaller percentages of parents had been to see the principal or a teacher (23.1%) or phoned the principal or teacher (19.2%) about their child's behaviour or school performance.

Differences between children with and without special educational needs (top part of Table 3.20) were not marked for parent-teacher meetings or school events. However, parents of children with special educational needs, compared to parents of children without special educational needs, had more frequently been to see the principal or teacher (42.3% vs 16.2%) or phoned the principal or teacher (36.6% vs 12.9%) about their child's behaviour or performance.

Communication between parents and school staff varied across specific SEN groups (bottom part of Table 3.20). For example, it was more common among parents of children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, Autistic Spectrum Disorders, multiple or unclassified SEN, and specific learning difficulties or speech and language difficulties, than among parents of children with SEN at age 9 only, or physical or sensory disabilities. In all four cases, variations across SEN groups are statistically significant (p < .001). The observed differences are likely to be of substantive importance in the case of seeing a principal or teacher, and phoning the principal or teacher.

Section 3.7 summary: Parents of children with special educational needs reported helping their child with homework more frequently than parents of children without special educational needs. However, frequency of help varied a lot across specific SEN groups, being relatively infrequent among parents of children with behavioural, emotional or social difficulties, physical or sensory disabilities, and children with SEN at age 9 only.

Among parents of children with special educational needs, parents of children with physical or sensory disabilities were most likely to indicate that their child did not need help, while parents of children with behavioural, emotional or social difficulties, specific learning difficulties or speech and language difficulties, Autistic Spectrum Disorders, and multiple or unclassified SEN were most likely to indicate that their child did not want help.

Children with behavioural, emotional or social difficulties stand out as a group where help may be needed by some children, but where the children themselves did not want to be helped.

Parents of children with and without special educational needs had similar levels of attendance at parent-teacher meetings and school events. However, parents of children with special educational needs had more frequently met with school staff, or phoned school staff, than children without special educational needs.

3.8   Chapter summary

This chapter described the school and home contexts of children with and without special educational needs. It aimed to identify aspects of children's environments that may give rise to social and/or educational inequities, examine broad transition pathways of children from primary to post-primary schools, and look at the extent to which some aspects of children's home environments have changed or remained stable over time. It should be noted that the characteristics of children's environments have only been examined one at a time, and many may be inter-related with one another.

School and class enrolment patterns

- A comparison of the sample of 13 year olds in GUI with the population of First and Second Year students enrolled in post-primary schools in 2011–2012 (when Wave 2 data were collected) indicated that, while the GUI sample is broadly representative of the population, it is slightly more socio-economically advantaged than the population. The implication of this is that any differences between groups of children as they relate to socio-economic characteristics of schools may be underestimated on the basis of the age 13 GUI data.

- At age 13, 98.2% of children were enrolled in post-primary schools. A little under half of these children (47%) were in First Year, and 53% were in Second Year.

- Just under 1% (0.9%) of 13 year olds in GUI were enrolled in primary school. In 2011–2012, 2.6% of the national population of children aged 13 were in primary schools which suggests that this sub-group is slightly under-represented in GUI. The same percentage of children in GUI Wave 2 (0.9%) were enrolled in special schools, which is similar to the population estimate of 1.1%.

- A comparison of the distribution of children across DEIS and non-DEIS post-primary schools indicated that about one-and-a-half times as many children with special educational needs (25%) than without special educational needs (16%) were enrolled in DEIS post-primary schools. Enrolment of children with behavioural, emotional or social difficulties (35%) in DEIS post-primary schools was particularly high.

- Some groups of children with special educational needs were disproportionately clustered in specific post-primary school sectors. Most notably, 24% of children without special educational needs were in ETB schools, while 35% of children with behavioural, emotional or social difficulties and general learning disabilities or difficulties, and about 30% of children with physical or sensory disabilities and SEN at age 9 only, were enrolled in ETB schools.

Differences in school climate characteristics

- Children with special educational needs tended to be clustered in schools with a greater percentage of children with literacy and numeracy difficulties, learning difficulties, physical disabilities, and emotional and behavioural problems (based on principals' responses).

- However, this 'clustering' effect was much more pronounced when comparing DEIS and non-DEIS schools. In other words, socio-economic inequality, more so than the SEN status of children, appears to be underlying the distribution of these characteristics across schools.

- Nonetheless, the association between special educational needs and socio-economic vulnerability should not be understated, either: this association is clearly evident when we examined *individual* socio-economic characteristics of children with and without special educational needs (described a little later here).

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Transition pathways between age 9 and 13

- About 8% of all children had attended a DEIS primary school and subsequently enrolled in a DEIS post-primary school. This percentage is almost twice as high among children with special educational needs (12%) than children without special educational needs (7%). Children with physical or sensory disabilities and with behavioural, emotional or social difficulties were the most likely among the SEN groups to have attended a DEIS school at both primary and post-primary levels.

- Of the 44 children who were in special schools at age 9 and who took part at age 13, three-quarters (74%) were also in special schools at age 13. Of the remaining children, 50% were in secondary schools, 33% were in ETB schools, and 17% were in community and comprehensive schools (42% of these were DEIS post-primary schools).

Children's home environments

- One-parent families were more prevalent among children with special educational needs (27%) than children without special educational needs (16%), and were particularly prevalent among children with behavioural, emotional or social difficulties (36%), general learning disabilities or difficulties (35%), and Autistic Spectrum Disorders (31%).

- Across all children, 78% lived in a two-parent family at both ages, and 15% lived in a one-parent family at both ages. The remaining 8% of children experienced a change in household composition, from a one- to a two-parent family (3%), or from a two- to a one-parent household (5%). Twice as many children with special educational needs (12%) than without special educational needs (6%) had experienced a change in household composition, and changes in household composition were highest among families of children with behavioural, emotional or social difficulties.

- Levels of parental education and occupation were lowest among families of children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, and physical or sensory disabilities.

- Changes in levels of financial stress between age 9 and 13 indicated that across about 44% of all GUI families, there has been a worsening of levels of financial stress (with no change in 50% and improvements in the remaining 6%). Parents of children with special educational needs reported less stability in levels of financial stress than those of children without special educational needs. Worsening of financial stress was most common among families of children with behavioural, emotional or social difficulties, specific learning difficulties or speech and language difficulties, and children with SEN in age 9 only.

Parental involvement with homework and the school

- Parents of children with special educational needs reported helping their child with homework more frequently than parents of children without special educational needs, although this varied across specific SEN groups. It was relatively infrequent among parents of children with behavioural, emotional or social difficulties, physical or sensory disabilities, and children with SEN at age 9 only.

- Parents of children with and without special educational needs had similar levels of attendance at parent-teacher meetings and school events. However, parents of children with special educational needs had been in contact with school staff more frequently than children without special educational needs. Reasons for contact with the school were not reported in GUI.

4. How are children with special educational needs getting on at age 13?

4.1 Chapter overview

In this chapter, we examine four themes:

- Settling into post-primary school

- Engagement and attendance

- Happiness and wellbeing

- Achievement and expected attainment.

Within each theme, we examine one or more outcomes, providing comparisons between children with and without special educational needs.

Taken together, Chapters 3 and 4 provide a context in which to interpret children's progress between the ages of 9 and 13 in Chapter 5. Not all of the outcomes examined here are possible to look at in the context of progress or change over time (Chapter 5), since there are not comparable measures across both waves in all cases.

The chapter summary draws findings from the four themes together. *Section 2.5* in Chapter 2 provides information on how to interpret the results in this chapter.

4.2 Settling into post-primary school

As noted in Chapter 3, a majority of children (98.2%) who took part in Wave 2 of GUI were in post-primary school. Of these, just under half (46.9%) were in First Year and just over half (53.1%) were in Second Year.

In Wave 2 of GUI, parents were asked whether they agreed with seven questions relating to their child's settling in to post-primary school.[35] Their responses to four of these statements are shown in Table 4.1.

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[35] Parents of children in first and second year were asked to respond to the same seven statements, with some of the statements put to parents of second year students referring to the past, rather than the present, e.g. 'my child settled well into secondary school' compared to 'my child is settling well into secondary school'. Involvement in extracurricular activities statements were in the present tense for both sets of parents.

Taking the first statement as an example, about 91% of parents of *all* children in post-primary school agreed that their child had settled in well. The first two rows of the table show that the parents of 94% of children without special educational needs agreed that their child settled in well, compared to 80% of parents of children with special educational needs. Looking at the individual SEN groups, parents of children with behavioural, emotional and social difficulties (72.7%) and Autistic Spectrum Disorders (71.8%) were less inclined to agree that their child settled in well to post-primary school. In contrast, 91.3% of parents of children with physical or sensory disabilities that impact on daily life agreed that their child had settled in well. However, it should be noted that 13% of children with physical or sensory disabilities were attending special school.

There is variation in responses to other statements about aspects of the transition process, particularly in relation to coping well with school work and involvement in extra-curricular activities. While 93% of parents of children without special educational needs agreed that their child coped well with schoolwork, only 70% of parents of children with special educational needs agreed. This ranges from 47% of parents of children with general learning disabilities or difficulties to 87% of children with SEN at Wave 1 only. On the other hand, a large majority of children across all groups made new friends, which is a positive finding.

Table 4.1 also shows that involvement in extra-curricular activities was lower among children with special educational needs (64.7%) compared to children without special educational needs (81.7%) and was lowest among children with Autistic Spectrum Disorders (47.5%) and with physical or sensory disabilities that impact on daily life (55.6%). While some variation may be expected given the likely needs, characteristics and personal preferences of children in the various groups, the findings do suggest that additional support that goes beyond academic boundaries may be helpful for some children, to allow for a successful transition.

Table 4.1: Percentages of parents agreeing with four statements on their child's settling in to post-primary school, by SEN group (First and Second Years combined)

Group	N	Child settled well into post-primary school	Child coped well with school work	Child made new friends	Child is involved in extra-curricular activities
Children without special educational needs	5460	93.8	92.7	96.0	81.7
Children with special educational needs	1912	79.9	69.5	94.0	69.8
All children	**7372**	**91.4**	**87.6**	**95.5**	**78.6**
Of those with any SEN...					
Behavioural, emotional or social difficulties	294	72.7	68.6	91.0	64.7
General learning difficulties or disabilities	173	82.5	46.6	89.8	67.1
Specific learning difficulties or speech and language difficulties	575	84.0	68.9	95.6	71.6
Autistic Spectrum Disorders	86	71.8	61.9	84.4	47.5
Physical/sensory disabilities that impact on daily life	49	91.3	81.7	97.0	55.6
Multiple or Unclassified SEN	75	82.9	77.7	89.5	71.1
SEN age 9 only	660	91.5	86.5	96.6	75.2

Note. Data are weighted by the Wave 2 sample weight.

The table excludes 153 children (2.0%) whose parents did not respond to questions on settling into post-primary school.

We combined the responses to these four statements to form an indicator of a child's transition to post-primary school[36] in order to summarise the results shown in Table 4.1. Higher scores indicate a better or more positive transition, while lower scores indicate a less positive transition. The index has a mean of 50 and a standard deviation of 10,[37] implying that about two-thirds of scores on this measure range between 40 and 60 points.

The mean scores of children in each special educational needs group are shown in Table 4.2. There is a moderate-sized difference between children with and without special educational needs. The table also shows that each of the seven SEN groups (including children with SEN at Wave 1 only) have statistically significantly lower scores than children without special

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[36]   The methods used to form this and other similar scales are described in Chapter 2, Section 2.5.4.

[37]   The standard deviation gives an indication of the distribution of individual scores around the mean. Chapter 2 provides more information.

educational needs on this index, meaning that they did not settle into post-primary school as well or as smoothly. Scores are particularly low for children with Autistic Spectrum Disorders, social emotional or behavioural difficulties and general learning disabilities or difficulties.[38]

We also compared the mean scores on this index for children in First and Second Year separately in case being in First or Second Year influenced the pattern of results shown in Table 4.2. However, the patterns are similar, regardless of whether the child was in First or Second Year, and so are not shown here. As already noted, parents of Second Year students were asked to reflect on their child's transition (some statements were in the past tense), but may however be responding about their child's transition to school up until the point of data collection. Therefore, consideration must be given to whether some of the Second Year children adjusting less well to a post-primary setting are having transition difficulties, or could be regarded as having difficulties coping at school in general.

Table 4.2: Mean scores of children on the index of adjustment to post-primary school, by SEN group (First and Second Years combined)

Group	N	Mean	SD
Children without special educational needs	5460	51.52	9.00
Children with special educational needs	1912	**45.66**	11.36
All children	**7372**	**50.00**	**10.00**
Of those with any SEN…			
Behavioural, emotional or social difficulties	294	**41.64**	12.57
General learning difficulties or disabilities	173	**42.19**	11.42
Specific learning difficulties or speech and language difficulties	575	**45.50**	10.81
Autistic Spectrum Disorders	86	**37.37**	11.50
Physical/sensory disabilities that impact on daily life	49	**45.92**	10.62
Multiple or Unclassified SEN	75	**45.16**	13.43
SEN Age 9 only	660	**49.62**	9.35

Notes. Higher values on the index imply a better experience settling in; lower scores imply a worse experience settling into post-primary school. The table excludes 153 children (2.0%) whose parents did not respond to questions on settling into post-primary school.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01).

Note. Data are weighted by the Wave 2 sample weight.

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[38] To explore these differences further, we compared the adjustment index scores of children by post-primary DEIS status and found that adjustment scores were lower in DEIS than non-DEIS schools (difference = 1.85 points; t = 6.087, df =7364, p < .001). We also found that children in ETB schools had significantly lower scores on this index than children in secondary and community/comprehensive schools (the difference is not large, though, at about 0.9 points; F = 4.692, df = 2, 7346, p < .001).

The practical implications of these findings become apparent when we consider the relationship between the index of adjustment to post-primary school and other outcomes of these children: there is a significant positive relationship, meaning when children experience a better transition to post-primary school, their scores on a range of outcomes increase. The relationship is seen between this index and children's verbal reasoning test scores (r = .162, p < .001), their numeric ability test scores (r = .214, p < .001) and their wellbeing scores (r = .272, p < .001). Inter-relationships between outcomes are considered further in Section 4.6.

We examined whether or not settling in to post-primary school is related to supports put in place by post-primary schools. This does not appear to be the case, although (or perhaps because) transition supports of the kinds asked about in GUI are widely implemented.

Table 4.3: Percentages of children in schools with various transition supports, all GUI Wave 2 participants

Type of transition support	%
Induction day	94.7
Formal transition/integration programme	62.6
Links with Primary School(s)	91.9
Class tutors	98.0
Student Mentors	86.9
Study Skills Programme	75.5
Other	25.6
Number of kinds of transition supports	**%**
Two	1.4
Three	3.8
Four	14.5
Five	31.2
Six	37.1
Seven	12.0
Total	**100.0**

348 children (4.6%) are missing data for this question.

Note. Data are weighted by the Wave 2 sample weight.

All of the post-primary schools that the children who took part in GUI at age 13 had one or more forms of induction or transition support for students beginning post-primary school (Table 4.3). A majority (80.3%) had five or more of the supports listed in Table 4.3 in place. However, there are no differences in parents' reports of their child settling in to post-primary school on any of these measures, whether the child had special educational needs or not, so school supports for the primary to post-primary transition process are not explored further here. One possible reason for the lack of association between transition supports and children's settling in to post-primary school is that the questions asked of principals in GUI did not look at targeted supports; rather, they looked at general forms of support. The lower scores on the index of settling in for some groups of children (Table 4.2), as well as the variations in specific aspects of settling into post-primary school (Table 4.1), suggest the need for more in-depth examination of supports that are in place to see if different and/or targeted supports might be effective for children with SEN.

4.3   Engagement and attendance

This section considers four aspects of this theme in turn. The first two aspects are attitudinal, while the latter two are behavioural measures:

- Overall liking of school

- Levels of interest in specific school subjects

- Days absent from school and reasons for absence

- Lateness and disciplinary issues.

4.3.1   Overall liking of school

Children were asked 'How do you feel about school in general?'. About 60% of all children indicated that they like school very much (28.9%) or like it quite a bit (32.6%). Just over one quarter (26.9%) reported liking school a bit, while 8.3% said they don't like it very much, and 3.3% indicated that they hated school. The distribution of responses across each SEN group is shown in Table 4.4.

Reports of disliking school were twice as frequent among children with special educational needs (17.4%) compared to children without special educational needs (9.6%). The variation across SEN groups is statistically significant. Children with physical or sensory disabilities that impact on daily life are almost ten times more likely to hate school than children without special educational needs.

Table 4.4: **Overall liking of school (responses to the question "How do you feel about school in general?"), by SEN group**

Group	N	Like it very much	Like it quite a bit	Like it a bit	Don't like it very much	Hate it	Total %
Children without special educational needs	5404	30.4	34.3	25.8	7.5	2.1	100.0
Children with special educational needs	1944	24.5	27.8	30.2	10.7	6.7	100.0
All children	**7348**	**28.9**	**32.6**	**26.9**	**8.3**	**3.3**	**100.0**
Of those with any SEN...							
Behavioural, emotional or social difficulties	294	25.1	24.2	28.8	8.6	13.3	100.0
General learning difficulties or disabilities	180	25.1	26.7	24.4	19.0	4.7	100.0
Specific learning difficulties or speech and language difficulties	590	24.7	27.8	33.9	10.1	3.6	100.0
Autistic Spectrum Disorders	94	30.3	27.7	32.7	8.3	1.0	100.0
Physical/sensory disabilities that impact on daily life	52	13.4	30.9	33.1	2.9	19.6	100.0
Multiple or Unclassified SEN	83	23.6	27.5	40.0	2.9	6.1	100.0
SEN Age 9 only	651	24.2	29.7	27.4	11.7	7.1	100.0

177 (2.4%) of children have no data for this question.

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 78.759, df = 1, p < .001

4.3.2 Interest in specific school subjects

Children were asked whether or not they found Maths, Irish, and English interesting. They selected 'Don't Take' if they did not study the subject in question. Tables 4.5, 4.6, and 4.7 show the percentages of children indicating varying levels of interest in Maths, Irish, and English respectively. The percentages of students not taking each subject are also shown.

In the case of Maths (Table 4.5), about one in three (32.2%) of *all* children found Maths interesting, while one in five (19.6%) felt that Maths was not interesting. About half (48.2%) felt it was OK. Although there is some variation in levels of interest across SEN groups, these differences are not statistically significant.

Table 4.5: Interest in Maths, and percentages not taking Maths (responses to the question "Please indicate if you find the subject Interesting, OK, Not Interesting, or you don't take the subject"), by SEN group

Group	N Taking	% of those taking...			Don't take Maths %
		Interesting	OK	Not interesting	
Children without special educational needs	5454	33.1	47.2	19.7	0.0
Children with special educational needs	1944	29.9	50.9	19.2	0.2
All children	**7398**	**32.2**	**48.2**	**19.6**	**0.1**
Of those with any SEN...					
Behavioural, emotional or social difficulties	291	36.3	43.4	20.3	1.0
General learning difficulties or disabilities	180	25.0	56.2	18.8	0.0
Specific learning difficulties or speech and language difficulties	586	27.3	53.4	19.3	0.0
Autistic Spectrum Disorders	91	32.6	42.8	24.6	1.0
Physical/sensory disabilities that impact on daily life	52	30.2	45.9	23.9	0.0
Multiple or Unclassified SEN	87	30.6	49.7	19.7	0.0
SEN Age 9 only	657	30.2	52.2	17.6	0.0

Note. The figures under Interesting, OK and Not interesting are percentages of children taking the subject. The figures under Don't take Maths are the percentages of all children who responded to the question (N = 7403).

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 1.122, df = 1, p = .289

Turning now to interest in Irish (Table 4.6), overall, children expressed lower levels of interest in this subject than Maths (or indeed English shown in Table 4.7): About one-third of children (32.0%) indicated that Irish was not interesting, while just over one in five (21.9%) responded that they found Irish interesting. Slightly fewer children with special educational needs (17.8%) indicated an interest in Irish compared to children without special educational needs (23.1%).

In contrast to Maths, levels of interest in Irish varied significantly across SEN groups. Of note in Table 4.6 is that around 20% of children with special educational needs indicated that they don't take Irish. The percentages of children in the specific learning difficulty/speech and language difficulty and Autistic Spectrum Disorders groups (43–44%) not taking Irish are relatively high. The reasons for not taking Irish are most likely due to exemptions from studying the subject.

Table 4.6: Interest in Irish, and percentages not taking Irish (responses to the question "Please indicate if you find the subject Interesting, OK, Not Interesting, or you don't take the subject"), by SEN group

Group	N Taking	% of those taking...			Don't take Irish %
		Interesting	OK	Not interesting	
Children without special educational needs	5429	23.1	46.2	30.6	0.5
Children with special educational needs	1457	17.8	45.4	36.8	20.1
All children	**6886**	**21.9**	**46.1**	**32.0**	**5.5**
Of those with any SEN...					
Behavioural, emotional or social difficulties	283	22.2	43.9	33.8	3.6
General learning difficulties or disabilities	138	12.6	47.1	40.3	19.3
Specific learning difficulties or speech and language difficulties	232	17.0	42.5	40.5	43.4
Autistic Spectrum Disorders	45	22.3	30.9	46.8	43.8
Physical/sensory disabilities that impact on daily life	47	13.4	55.9	30.7	9.3
Multiple or Unclassified SEN	71	23.7	51.5	24.9	17.3
SEN Age 9 only	641	16.7	46.9	36.5	2.2

Note. The figures under Interesting, OK and Not interesting are percentages of children taking the subject. The figures under Don't take Irish are the percentages of all children who responded to the question (N = 7396).

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 22.550, df = 1, p < .001

Table 4.7 shows children's level of interest in English. Overall, interest in this subject was quite high: 43.6% of all children responded that they found English interesting, while 11.0% did not find English interesting. Levels of interest in English did not vary significantly across SEN groups.

Table 4.7: **Interest in English, and percentages not taking English (responses to the question "Please indicate if you find the subject Interesting, OK, Not Interesting, or you don't take the subject"), by SEN group**

Group	N Taking	% of those taking...			Don't take English %
		Interesting	OK	Not interesting	
Children without special educational needs	5447	44.6	44.3	11.1	0.1
Children with special educational needs	1944	40.7	48.3	10.9	0.4
All children	**7391**	**43.6**	**45.4**	**11.0**	**0.2**
Of those with any SEN...					
Behavioural, emotional or social difficulties	291	44.6	44.8	10.6	1.0
General learning difficulties or disabilities	180	33.8	50.5	15.7	0.0
Specific learning difficulties or speech and language difficulties	589	36.4	50.8	12.7	0.0
Autistic Spectrum Disorders	88	40.0	47.0	13.0	4.4
Physical/sensory disabilities that impact on daily life	52	28.7	62.2	9.1	0.0
Multiple or Unclassified SEN	87	38.2	58.0	3.8	0.0
SEN Age 9 only	657	46.2	44.8	9.0	0.0

Note. The figures under Interesting, OK and Not interesting are percentages of children taking the subject. The figures under Don't take English are the percentages of all children who responded to the question (N = 7405).

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 0.058, df = 1, p = .809

4.3.3 School absence rates and reasons for absences

Parents were asked for the number of days absent from school over the previous 12 months. Table 4.8 shows their responses for each SEN group. Figure 4.1 compares, for each SEN group, the percentages of children with low (0–3 days) and high (11 or more days) absences.

There are some variations in attendance rates across SEN groups, and they are statistically significant.

The relatively high absence rates of children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, physical or sensory disabilities, and multiple or unclassified SEN is noteworthy (Figure 4.1). Also, children with SEN at age 9 only had low absence rates compared to many of their peers with special educational needs at age 13.

There are negative relationships[39] between days absent from school and children's verbal reasoning and numeric ability test scores, meaning that as children missed more days in school, their scores on these tests declined.

Table 4.8: Absences from school over the past 12 months (parents' reports), by SEN group

Group	N	None	1-3 days	4-6 days	7-10 days	11-20 days	>20 days	Total
Children without special educational needs	5465	14.6	37.4	25.3	14.2	6.6	1.9	100.0
Children with special educational needs	1979	12.6	30.3	24.9	15.7	11.6	4.9	100.0
All children	**7444**	**14.1**	**35.5**	**25.2**	**14.6**	**7.9**	**2.7**	**100.0**
Of those with any SEN…								
Behavioural, emotional or social difficulties	297	12.0	31.0	22.6	13.7	13.7	6.9	100.0
General learning difficulties or disabilities	177	10.1	36.8	18.0	15.5	12.5	7.1	100.0
Specific learning difficulties or speech and language difficulties	592	12.1	26.5	28.6	16.9	11.8	4.1	100.0
Autistic Spectrum Disorders	102	9.2	39.0	25.1	10.9	7.7	8.1	100.0
Physical/sensory disabilities that impact on daily life	56	13.5	19.9	32.2	14.2	14.8	5.5	100.0
Multiple or Unclassified SEN	89	14.7	26.3	26.3	10.6	13.0	9.1	100.0
SEN Age 9 only	666	14.2	31.8	23.6	17.1	10.4	2.9	100.0

45 parents (0.6%) indicated their child was not in school over the past 12 months. These children have not been included in the table.

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 45.050, df = 1, p < .001

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[39] r [verbal reasoning] = -.074, df = 7018, p < .001; r [numeric ability] = -.138, df = 7018, p < .001.

Figure 4.1: Absences from school over the past 12 months (parents' reports), by SEN group
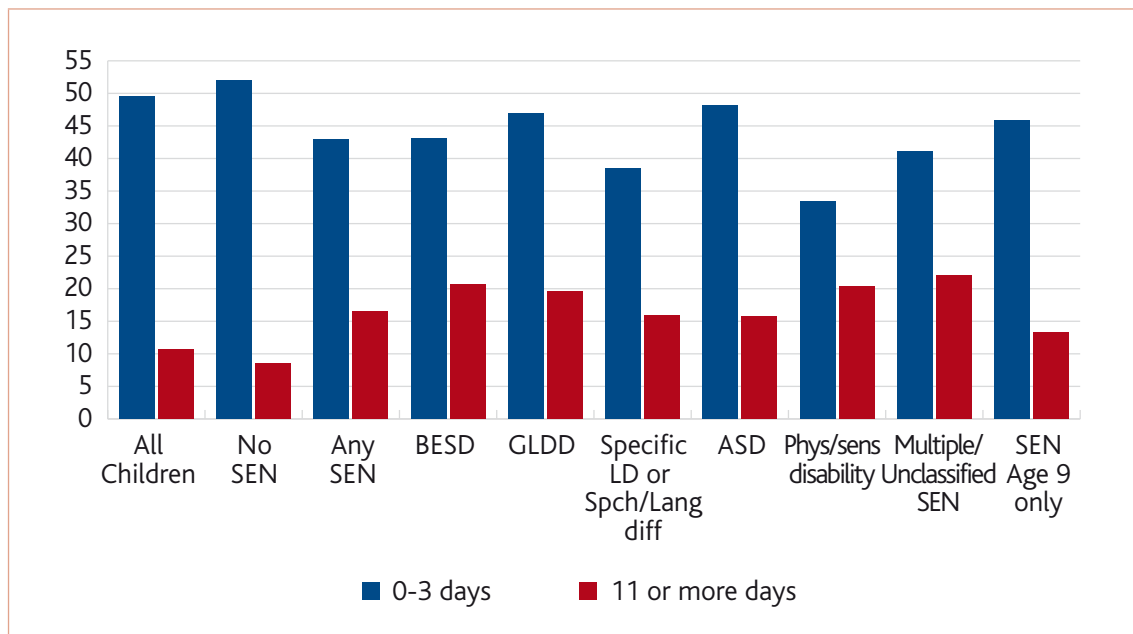
Across all children, a large majority of school absences (80%) were due to illness or injury. About 10% of all absences were due to family holidays or other events, 4% due to problems with transport or weather conditions, 2.4% due to a family crisis, 1.6% due to child-related social and emotional reasons (e.g. refusal to go to school, school phobia, problems with other children), and 3% for other reasons. The variation in reasons for absences is not very pronounced across the children with and without special educational needs. However, child-related absences are more than three times more likely for children with special educational needs than for children without, and children without special educational needs were more likely to have missed school for family holidays or other events.

4.3.4   Frequency of disciplinary issues

Children were asked to indicate the frequency with which seven things relating to discipline had occurred over the past 12 months. Responses to these questions are negatively skewed, meaning that most children ticked 'Never' in response to the seven statements (rather than selecting among the other response options of Now and Again, Quite Often, or All the Time).

The frequency with which children responded Now and Again, Quite Often, or All the Time to four of these items is shown in Table 4.9. The responses for these categories were combined due to the negative skew in responses, as noted. Across all children, about 38% had been late for school once or more often over the past 12 months, 42% had been in trouble for not following school rules, 5% had skipped classes, and 3% had been suspended. A comparison of the responses to these items from children with and without special educational needs indicates a higher incidence of disciplinary issues among children with special educational needs in general.

There are some interesting patterns comparing across the different SEN groups. For example, children with Autistic Spectrum Disorders were late for school more frequently than any of the other groups of children, while children with behavioural, emotional or social difficulties were less likely than the other groups to follow school rules. Children with behavioural, emotional or social difficulties were also more likely to have skipped classes and have been suspended from school than children in the other groups. On the other hand, children with physical or sensory disabilities reported relatively low rates of disciplinary issues.

Table 4.9: Percentages of children responding Now and Again, Quite Often, or All of the Time to four statements about the occurrence of disciplinary issues over the past 12 months, by SEN group

Group	N	Late for school	In trouble for not following school rules	Skipped classes	Suspended from school
Children without special educational needs	5450	35.6	39.3	3.6	1.8
Children with special educational needs	1952	46.4	49.7	8.1	8.1
All children	**7402**	**38.5**	**42.1**	**4.8**	**3.2**
Of those with any SEN…					
Behavioural, emotional or social difficulties	294	44.7	58.8	13.8	14.9
General learning difficulties or disabilities	180	43.9	46.1	8.3	8.4
Specific learning difficulties or speech and language difficulties	590	46.5	48.8	9.9	6.3
Autistic Spectrum Disorders	94	55.2	52.6	3.5	5.2
Physical/sensory disabilities that impact on daily life	52	34.5	23.2	0.0	0.0
Multiple or Unclassified SEN	87	40.1	41.4	3.0	2.3
SEN Age 9 only	654	48.4	50.3	5.8	5.4

Note. Data are weighted by the Wave 2 sample weight.

The table excludes 123 children (1.6%) who do not have data on this question.

We combined the responses to the seven statements on frequency of various discipline-related issues to form an indicator of disciplinary issues.[40] The index has a mean of 50 and a standard deviation of 10.[41] Higher scores on the index indicate more frequent disciplinary issues, while lower scores indicate less frequent disciplinary issues.

The mean scores of children in each SEN group are shown in Table 4.10. Compared to children without special educational needs (49.2), children with special educational needs have a significantly higher score on this index (52.4), indicating more frequent discipline problems. Children with behavioural, emotional or social difficulties have the highest mean score on this index of all SEN groups (55.7). Children with general learning disabilities or difficulties (51.9), specific learning difficulties or speech and language difficulties (52.0), and SEN at Wave 1 only (52.4) also have mean scores on this index that are significantly higher than the mean score of children with no special educational needs.

Table 4.10: Mean scores of children on the index of disciplinary issues in school, by SEN group

Group	N	Mean	SD
Children without special educational needs	5450	49.16	9.09
Children with special educational needs	1952	**52.36**	11.88
All children	**7402**	**50.00**	**10.00**
Of those with any SEN...			
Behavioural, emotional or social difficulties	294	**55.70**	13.56
General learning difficulties or disabilities	180	**51.87**	12.96
Specific learning difficulties or speech and language difficulties	590	**51.99**	10.85
Autistic Spectrum Disorders	94	50.50	9.45
Physical/sensory disabilities that impact on daily life	52	47.01	6.94
Multiple or Unclassified SEN	87	49.59	9.16
SEN Age 9 only	654	**52.38**	12.26

Higher values on the index imply more frequent disciplinary issues; lower scores imply fewer disciplinary issues.

The table excludes 123 children (1.6%) who do not have data for this question.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01).

Note. Data are weighted by the Wave 2 sample weight.

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[40]   The methods used to form this and other similar scales are described in Chapter 2, Section 2.5.4. The three additional items which are not shown in the table are "I messed in class", "I had to do extra work as punishment (including lines)", "I had to do detention (after school or at lunchtime)".

[41]   The standard deviation gives an indication of the distribution of individual scores around the mean. A higher standard deviation shows that the scores for a group are more spread out. Chapter 2 provides more information.

It is worth considering the relationship between the index of disciplinary issues and other outcomes in this chapter: there is a significant negative relationship between this index and children's verbal reasoning test scores, their numeric ability test scores, and in particular their wellbeing scores.[42] In other words, children reporting more frequent discipline problems tend to have lower test scores, as well as a lower sense of wellbeing, than children experiencing few or no disciplinary problems.

4.4   Happiness and wellbeing

This section considers indicators of children's wellbeing. The measures examined are:

- Subjective sense of wellbeing (Piers-Harris self-concept scale and subscales)

- Mood and feelings (Mood and Feelings Questionnaire)

- Number of close friends and quality of peer relationships

- Being bullied: frequency, nature, reasons and impact.

We provide a comparison of parents' and children's reports of being bullied in order to get a sense of the extent to which there is an overlap between parent and child perception of bullying. Where relevant, we consider inter-relationships among these measures of wellbeing.

4.4.1   Piers-Harris total scale and subscales

The Piers-Harris scale (Piers & Herzberg, 2007) consists of 60 statements about the self, to which respondents select Yes or No. It measures six domain areas in addition to overall self-concept.[43] The domain scales (or subscales) are:

- Behavioural Adjustment: 14 items assessing admission or denial of problematic behaviours.

- Intellectual and School Status: 16 items assessing the child's evaluation of his or her own abilities in terms of intellectual and academic tasks.

- Physical Appearance and Attributes: 11 items measuring the child's assessment of his or her own physical appearance as well as their appraisals of certain personality attributes such as ability to express one's ideas and leadership abilities.

- Freedom from Anxiety: 14 items that measure anxiety and low mood.

- Popularity: 12 items that capture the child's evaluation of his or her own social functioning.

- Happiness and Satisfaction: 10 items assessing the child's feelings of happiness and satisfaction with life.

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[42]   Verbal reasoning, r = -.108, p < .001; numeric ability, r = -.153, p < .001; and wellbeing, r = -.286, p < .001.

[43]   See http://www.cup.ualberta.ca/wp-content/uploads/2012/06/FINAL_Piers-Harris-2_May-2012.pdf.

Table 4.11 shows children's wellbeing scores on each of the measures. The means for these measures have been transformed into a new scale.[44] For all of these measures, higher scores indicate a more positive sense of wellbeing or self-concept. On the overall scale and each of the six subscales, children with special educational needs have significantly lower mean scores than children without special educational needs. For example, on the overall wellbeing scale, the mean score of children with special educational needs (46.8) is 4.3 points lower than the mean score of children without special educational needs (51.1). This can be interpreted as a moderate sized difference,[45] which indicates the difference is moderate in substantive terms, but the clinical or other implications that could be drawn from this (or from other differences of a larger nature) would need to be explored further.

Table 4.11 also shows that all seven SEN groups have significantly lower mean scores on the wellbeing *total* scale than their counterparts without special educational needs. As might be expected, scores are particularly low among children with behavioural, emotional or social difficulties. For example, on the wellbeing total scale, children with behavioural, emotional or social difficulties have a mean score of 43.5, which is substantially lower than children with no special educational needs. This difference, in substantive terms, is large. All seven SEN groups also have significantly lower scores than children without SEN on the popularity subscale, and the mean score for children with Autistic Spectrum Disorders (42.8) is particularly low on this subscale.

Two of the subscales of particular relevance to *wellbeing* in the present study are: *freedom from anxiety* and *happiness and satisfaction*.

With respect to the *freedom from anxiety* subscale, five of the seven SEN groups have significantly lower mean scores than children without special educational needs. In particular, children with behavioural, emotional or social difficulties and multiple or unclassified SEN have mean scores lower than the mean score of children without special educational needs; these are moderate to large differences.

Three of the seven SEN groups have significantly lower scores than children without special educational needs on the *happiness and satisfaction* subscale – these are children with behavioural, emotional or social difficulties, multiple or unclassified SEN, and SEN at Wave 1 only. Similar to the *freedom from anxiety* subscale, in the case of children with behavioural, emotional or social difficulties, this difference is moderate to large.

Table 4.11: Children's wellbeing scores (Piers-Harris total scale and subscales), by SEN group

Group	N (Min)	N (Max)	P-H Total Score		Behavioural Adjustment		Intellectual and School Status		Physical Appearance and Attributes		Freedom from Anxiety		Popularity		Happiness and Satisfaction	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Children without special educational needs	5422	5477	51.12	9.45	51.11	8.97	51.23	9.57	50.45	9.85	50.70	9.65	50.87	9.29	50.48	9.64
Children with special educational needs	1904	1942	**46.82**	10.82	**46.85**	11.90	**46.53**	10.37	**48.73**	10.32	**48.03**	10.67	**47.55**	11.43	**48.65**	10.85
All children	7326	7419	**50.00**	10.00	**50.00**	10.00	**50.00**	10.00	**50.00**	10.00	**50.00**	10.00	**50.00**	10.00	**50.00**	10.00
Of those with any SEN…																
Behavioural, emotional or social difficulties	289	292	**43.51**	13.40	**42.03**	15.53	**46.36**	11.57	**46.97**	11.10	**44.39**	12.75	**45.16**	13.72	**45.56**	12.79
General learning difficulties or disabilities	169	176	**45.52**	11.79	**46.86**	11.39	**44.25**	11.28	**47.73**	10.49	**47.64**	11.63	**46.71**	12.56	48.51	11.24
Specific learning difficulties or speech and language difficulties	577	588	**48.01**	9.17	**47.89**	10.32	**46.20**	10.02	49.83	9.72	**49.28**	9.15	**49.26**	9.69	50.18	9.75
Autistic Spectrum Disorders	89	91	**45.89**	11.03	48.20	11.75	**47.31**	8.82	48.36	10.86	48.12	11.65	**42.84**	12.88	48.11	10.89
Physical/sensory disabilities that impact on daily life	52	52	**46.31**	9.72	48.82	8.57	47.01	9.44	47.31	9.19	47.20	9.40	**45.87**	13.05	48.70	11.03
Multiple or Unclassified SEN	86	87	**45.74**	9.62	47.94	11.28	**47.73**	8.55	48.61	10.42	**45.57**	11.12	**45.35**	11.79	**46.63**	10.20
SEN Age 9 only	642	656	**47.90**	10.49	**47.58**	11.35	47.22	10.29	**48.99**	10.34	**49.00**	10.16	**48.39**	10.62	**49.05**	10.51

Higher values on the Piers-Harris total scale and subscales indicate higher wellbeing; lower scores indicate lower wellbeing.

The N (Min) and N (Max) columns show the range of the numbers of children responding to questions that make up each of the scales shown in the table.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01).

Note. Data are weighted by the Wave 2 sample weight.

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Finally, looking across the rows of the table to compare across the seven SEN groups, the results indicate that five of the groups – behavioural, emotional or social difficulties, general learning disabilities or difficulties, specific learning difficulties or speech and language difficulties, multiple or unclassified SEN, and SEN at Age 9 only, have significantly lower scores on a majority of these scales.

The most noteworthy aspect of the data in Table 4.11 is the very low scores of children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, Autistic Spectrum Disorders, and multiple or unclassified SEN.

4.4.2   Mood and feelings

One section of the questionnaire administered to children in Wave 2 of GUI consisted of the Short Mood and Feelings Questionnaire (SMFQ; Angold *et al.*, 1995). This consists of 13 statements with response options True, Sometimes, Not True, and is a short version of the 35-item Mood and Feelings Questionnaire (MFQ). The statements are designed to assess or identify low mood, e.g. "I felt miserable or unhappy", "I cried a lot", "I didn't enjoy anything at all".[46] Higher scores on the SMFQ indicate a lower mood. In line with the SMFQ authors' recommendations, we have not used a pre-specified cut-point to split the sample into 'low mood' and 'not low mood'.

Instead, we report results in two ways using the mean scores and percentages on the SMFQ: mean scores formed in a similar way to other scale scores in this report[47] (a mean of 50 and a standard deviation of 10); and percentages of students in each of the SEN groups with a score that is at or above the 95th percentile[48] (or the score closest to this point) are reported in Table 4.12.

Looking first at the percentages of children with the lowest reported mood, just over twice as many children with any SEN (9.9%) had very low mood compared to children without SEN (4.2%). These percentages are particularly high among children with behavioural, emotional or social difficulties (16.6%) and general learning disabilities or difficulties (15.9%). The mean score for mood and feeling is significantly higher (implying lower mood) among children with special educational needs (52.3) compared to children with no special educational needs (49.2). Mean scores of all but one of the SEN groups (children with physical or sensory disabilities) are significantly higher than the score of children with no special educational needs. Consistent with the pattern of results for wellbeing, mean scores for mood and feelings are particularly high (implying lower mood) among children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, Autistic Spectrum Disorders, and multiple or unclassified SEN.

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[46]   Sharp, Goodyer and Croudace (2006) provide a detailed analysis of the measurement properties of this instrument.

[47]   The methods used to form this and other similar scales are described in Chapter 2, Section 2.5.4.

[48]   Children with scores at or above the 95th percentile consist of the 5% of the sample with the lowest reported mood.

Table 4.12: Percentage of children with a mean score at or above the 95th percentile on the Short Mood and Feelings Questionnaire (SMFQ) and mean scores on the SMFQ, by SEN group

Group	N	% At or above 95th percentile	Mean	SD
Children without special educational needs	5448	4.2	49.19	9.16
Children with special educational needs	1945	9.9	**52.26**	11.76
All children	**7393**	**5.7**	**50.00**	**10.00**
Of those with any SEN...				
Behavioural, emotional or social difficulties	292	16.6	**55.99**	13.55
General learning difficulties or disabilities	174	15.9	**54.17**	14.40
Specific learning difficulties or speech and language difficulties	591	5.5	**50.68**	9.59
Autistic Spectrum Disorders	92	9.9	**55.80**	11.47
Physical/sensory disabilities that impact on daily life	52	11.7	52.49	10.55
Multiple or Unclassified SEN	86	9.3	**54.27**	13.87
SEN Age 9 only	657	9.4	**50.74**	11.16

Higher values on the index imply lower mood; lower scores imply better mood.

The table excludes 132 children (1.8%) who do not have data for this question.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01).

Note. Data are weighted by the Wave 2 sample weight.

As one might expect, the relationships between the score on the SMFQ and the Piers-Harris scale and subscales are all moderate to strong, and negative (Table 4.13); in other words, the lower the mood expressed by children, the lower their self-concept and sense of overall wellbeing.

Table 4.13: Pearson correlations between the SMFQ and Piers-Harris scale scores, all children

Piers-Harris Scale	Pearson correlation with SMFQ
Piers-Harris Total Score	-.639**
Behavioural Adjustment	-.506**
Intellectual and School Status	-.447**
Physical Appearance and Attributes	-.361**
Freedom from Anxiety	-.582**
Popularity	-.475**
Happiness and Satisfaction	-.515**

** Correlation is statistically significant (p < .001).

4.4.3 Children's peer relations

Children were asked how many friends they would describe as 'close friends'. The responses to this question are shown in Table 4.14. The results indicate that children with special educational needs reported having slightly fewer close friends on average (4.5) than children with no special educational needs (4.8). This difference is not large, but it is statistically significant (p < .01).

Among children with special educational needs, children with behavioural, emotional or social difficulties, general learning disabilities or difficulties and Autistic Spectrum Disorders reported fewer close friends than children with no special educational needs. There were no other statistically significant differences between children with no special educational needs and children with varying kinds of special educational needs.

A limitation of asking children about the number of close friends they have is that it does not provide information on the *quality* of peer relationships. This can be examined by looking at children's feelings about those relationships. Children were asked to indicate their feelings about their relationships with their close friends by responses ranging from 'Almost never true' to 'Almost always or always true' to 17 statements. These were taken from the 25-item Inventory of Parent and Peer Attachment (IPPA; Greenberg, Seigel & Leich, 1984) and comprise measures of *trust in peers* and *alienation from peers* (the attachment to parents' part of this inventory was not administered in GUI). Examples of items measuring trust are "My friends understand me"; "My friends accept me as I am". Examples of items measuring alienation are "I feel alone or apart when I am with my friends"; "My friends don't understand what I'm going through these days".

Table 4.14 shows the mean scores[49] on both of these measures for each SEN group. Higher scores on the trust scale indicate higher levels of trust and hence a higher quality of friendships; in contrast, higher scores on the alienation scale indicate higher levels of distance and hence a lower quality of friendships.

Mean scores on the trust and alienation scales are shown in Table 4.14. The table shows that children with no special educational needs have significantly higher scores than children with special educational needs on the trust scale, and significantly lower scores than children with special educational needs on the alienation scale. In other words, their quality of friendships can be interpreted as being better.

Looking at the seven specific SEN groups in the lower part of Table 4.14, it can be seen that children in all groups, other than children with physical or sensory disabilities, have significantly lower scores on the trust scale than children with no special educational needs. However, the pattern of results on the alienation measure is not the same. Only three groups of children – with behavioural, emotional or social difficulties, specific learning difficulties or speech and language difficulties, and SEN at Age 9 only – have significantly higher alienation scores than children with no special educational needs. The pattern of results shown in Table 4.14 is consistent with wellbeing scale scores (Table 4.11).

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49   The methods used to form this and other similar scales are described in Chapter 2, Section 2.5.4.

Table 4.14: Mean IPPA trust and IPPA alienation scale scores, by SEN group

Group	N	IPPA Trust		IPPA Alienation	
		Mean	SD	Mean	SD
Children without special educational needs	5423	50.88	9.27	49.39	9.71
Children with special educational needs	1908	**47.50**	11.47	**51.73**	10.60
All children	**7332**	**50.00**	**10.00**	**50.00**	**10.00**
Of those with any SEN...					
Behavioural, emotional or social difficulties	285	**46.23**	12.12	**54.97**	11.52
General learning difficulties or disabilities	171	**45.15**	13.45	51.30	11.61
Specific learning difficulties or speech and language difficulties	581	**47.44**	11.17	**51.22**	9.96
Autistic Spectrum Disorders	85	**46.04**	10.74	51.58	10.51
Physical/sensory disabilities that impact on daily life	51	51.50	10.68	50.61	9.71
Multiple or Unclassified SEN	85	**46.39**	12.22	51.85	11.79
SEN Age 9 only	651	**48.75**	10.71	**50.99**	10.17

Higher values on the IPPA Trust scale indicate higher levels of trust and better quality of friendships; higher values on the IPPA Alienation scale indicate higher levels of distance and lower quality of friendships.

193 children (2.6%) are missing data for this question.

Each SEN group is compared to the no-SEN group. Mean scores in bold indicate that the score of that SEN group is statistically significantly different from the no-SEN group (p < .01).

Note. Data are weighted by the Wave 2 sample weight.

Overall, results presented in this section suggest that as well as slightly fewer close friends, children with SEN tend to experience a somewhat lower quality of friendships with their peers.

As one might expect, there is a moderate negative correlation[50] between trust and alienation, meaning that children that report higher levels of trust, report lower levels of alienation. Also, there are significant relationships between trust and mood and feelings scores,[51] trust and wellbeing overall scores,[52] alienation and mood and feelings scores,[53] and alienation and wellbeing overall scores.[54] In other words, there are likely to be complex, mutually reinforcing associations between children's sense of wellbeing, mood, and quality of friendships.

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[50]   Negative relationship between trust and alienation, r = -.329, p < .001.

[51]   Negative relationship between trust and mood and feelings, SMFQ, r = -.305, p < .001.

[52]   Positive relationship between trust and overall wellbeing, r = .324, p < .001.

[53]   Positive relationship between alienation and mood and feelings, r = .462, p < .001.

[54]   Negative relationship between alienation and overall wellbeing, r = -.446, p < .001.

4.4.4   Being bullied: Frequency, nature, reasons and impact

In Wave 2 of GUI when children were aged 13, detailed information was collected on children's experiences of being bullied (where these occurred). This section considers the frequency and nature of being bullied, as well as the perceived reasons for being bullied, and how being bullied impacted on children. It is important to note that children and parents were asked about bullying in the absence of a definition of bullying, so the interpretation of the question and what constitutes bullying is likely to vary across respondents.

In all, 9.9% of children reported that they had been bullied over the past three months (Table 4.15): 7.9% of children without special educational needs reported being bullied, compared to 15.6% of children with special educational needs, indicating about double the incidence of being bullied among children with special educational needs.

Experiencing bullying was most common among children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, and multiple or unclassified SEN. Although not a focus of this section (and *not* shown in Table 4.15), it may be noted that the incidence of being bullied was the same for boys and girls with no special educational needs (7.8%), while among children with special educational needs, it was slightly higher among girls (17.1%) than boys (13.7%).

Table 4.15: Frequency of being bullied in the past three months, by SEN group

Group	N	Not bullied	Once or Twice	2 or 3 times a month	About once a week	Several times a week	Total
Children without special educational needs	5448	92.1	4.0	1.1	1.3	1.5	100.0
Children with special educational needs	1950	84.4	6.8	2.6	2.6	3.7	100.0
All children	**7398**	**90.1**	**4.7**	**1.5**	**1.6**	**2.1**	**100.0**
Of those with any SEN...							
Behavioural, emotional or social difficulties	291	73.0	12.9	1.2	5.8	7.1	100.0
General learning difficulties or disabilities	180	80.9	4.7	3.5	3.8	7.1	100.0
Specific learning difficulties or speech and language difficulties	590	88.2	5.9	1.7	1.7	2.5	100.0
Autistic Spectrum Disorders	94	84.5	4.6	1.8	6.8	2.3	100.0
Physical/sensory disabilities that impact on daily life	52	91.9	3.6	0.0	3.2	1.3	100.0
Multiple or Unclassified SEN	87	79.4	10.7	2.7	1.7	5.5	100.0
SEN Age 9 only	656	86.9	5.5	4.0	1.2	2.4	100.0

127 children (1.7%) are missing data for this question.

Note. Data are weighted by the Wave 2 sample weight.

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Table 4.16 shows the forms which the bullying took for those children who reported being bullied once or more in the past three months. Since low numbers of children reported being bullied (9.8% of all children), and the numbers of children indicating each type of bullying are lower still, comparisons are limited to those between the two broad groups of children with and without special educational needs.

Table 4.16: Types of bullying experienced by children, for all children who experienced bullying over the past three months, no-SEN compared to any SEN groups

Type of bullying	No SEN	Any SEN	All
Physical bullying	26.5	**29.3**	31.8
Verbal bullying	80.4	86.2	82.8
Electronic bullying	25.9	**36.6**	30.3
Pinning or passing notes or graffiti	11.6	**20.8**	15.4
Taking or damaging personal possessions	18.5	26.4	21.8
Exclusion (being left out)	38.5	46.4	51.8
Gossip or spreading rumours	49.3	52.1	50.5
Threatened or forced to do things	11.1	**19.2**	14.5
Mean number of kinds of bullying selected (SD)	2.62 (1.63)	**3.27** (2.17)	2.89 (1.90)
N bullied in past 3 months	429	305	734

Note. Data are weighted by the Wave 2 sample weight.

Figures in bold indicate that there is a significant difference between children with no SEN and with any SEN (p < .01).

The table includes responses of only those children (n=734) who indicated that they had been bullied over the past three months.

The three most common forms were verbal bullying (experienced by 82.8% of all children who had been bullied), exclusion (51.8%), and gossiping or spreading rumours (50.5%). Less common forms of bullying included being threatened or forced to do something (14.5%) and pinning up or passing around notes or having graffiti written about them (15.4%). In all cases, children with special educational needs experienced each form of bullying more frequently than children with no special educational needs. The table shows that four of the eight forms of bullying were experienced *significantly* more frequently among children with any SEN: these were physical and electronic bullying, pinning or passing around notes or graffiti, and being threatened or forced to do things. This is consistent with the finding (shown at the bottom of Table 4.16) that children with special educational needs experienced an average of 3.3 of the eight listed forms of bullying, which is significantly higher than the figure for children with no special educational needs (2.6).

The reasons provided by children for having been bullied are explored, and again, since the numbers of children being bullied are quite low, comparisons are limited to those between children with and without special educational needs, rather than providing more detailed comparisons among the SEN groups. Regardless of SEN status, the most common reasons for being bullied, according to the children themselves, were due to physical appearance and jealousy. Family background and being perceived as the 'teacher's pet' were also relatively common reasons.

There are some differences in perceived reasons for being bullied between children with and without special educational needs. Specifically, children with special educational needs were significantly more likely than children without special educational needs to indicate that they had been bullied because of a physical or learning difficulty or disability (20.9% v 5.6%), family background (18.8% v 8.3%), and race or religion (14.6% v 5.3%). Differences in reasons for bullying relating to race or religion are unexpected, since children with and without special educational needs are very similar in terms of ethnic and cultural backgrounds: 97.3% of children with no SEN, and 98.0% of children with any SEN, are from White Irish or Other White backgrounds. None of the respondents' parents identified as Irish Travellers, and similar, very small percentages identified as Black, Asian, or Other among children with and without special educational needs.

Children were also asked to indicate what impact being bullied had on them, if any. They responded Not at All, A Little, or A Lot to seven statements about how the bullying made them feel (e.g. Upset, Afraid, Angry, Isolated). Most commonly, children reported feeling upset and angry, with feelings of fear and isolation reported less frequently. There are no significant differences between children with and without special educational needs on these indicators of the impact of bullying, so comparisons of these two groups are not shown here. This finding is somewhat at odds with the results shown in Table 4.16, which would have suggested a slightly higher negative impact of bullying on children with special educational needs than without special educational needs, given the higher number of forms that the bullying took.

4.4.5   Parents' and children's reports of children's bullying

As well as children, parents were asked if their child had been bullied during the past three months. Across *all* children, the percentage of parents reporting that their child had been bullied (10.3%) is similar to children's reports (9.8%; see Table 4.15). However, there is not perfect agreement between children and their parents. Table 4.17 shows the percentages of children in each SEN group where parent and child reports of bullying, where they were both parent and child, child only, parent only, or neither.

Across *all* children, 84.0% had no reports of being bullied, 4.3% had reports from both the child and his or her parent, 5.6% of children reported being bullied (without the parents reporting this), and 6.0% of children's parents reported their child being bullied (without the child reporting this). This suggests substantial differences in the views and experiences of parents and their children with respect to the child being bullied.

Table 4.17: Comparison of children's and parents' reports of the child being bullied over the past three months, by SEN group

Group	N	Child and parent	Child only	Parent only	Neither	Total
Children without special educational needs	5445	2.8	4.7	4.3	88.2	100.0
Children with special educational needs	1051	8.2	7.4	10.3	74.1	100.0
All children	**7396**	**4.3**	**5.6**	**6.0**	**84.0**	**100.0**
Of those with any SEN...						
Behavioural, emotional or social difficulties	291	14.8	12.0	17.9	55.3	100.0
General learning difficulties or disabilities	180	15.0	3.9	10.0	71.1	100.0
Specific learning difficulties or speech and language difficulties	590	6.4	5.4	8.5	79.7	100.0
Autistic Spectrum Disorders	94	8.5	7.4	21.3	62.8	100.0
Physical/sensory disabilities that impact on daily life	52	3.8	3.8	3.8	88.5	100.0
Multiple or Unclassified SEN	87	14.9	5.7	20.7	58.6	100.0
SEN Age 9 only	656	4.4	8.7	6.3	80.6	100.0

126 children (1.7%) are missing data for one or both of these questions.

Note. Data are weighted by the Wave 2 sample weight.

Comparing children with and without special educational needs, there are some differences. For example, while 88.2% of children with no special educational needs had no reports of bullying, this is lower among children with special educational needs, at 74.1%. About 2.8% of children without special educational needs had reports of bullying from both parents and children, compared to 8.2% of children with any special educational needs. Therefore, from the combined views of children and their parents, bullying of children with special educational needs is about three times higher than among children without special educational needs.

Also of interest is the finding that, while 4.3% of children without special educational needs had reports of being bullied from their parents only, this figure is 10.3% among children with special educational needs. Reasons for this difference are not clear; it could be the case that some parents of children with special educational needs are more sensitive to and aware of bullying behaviours towards their child than parents of children without special educational needs. Also, that 4.7% of children with no special educational needs and 7.4% of children with special educational needs reported being bullied in the absence of a parental report, could suggest difficult-to-spot bullying behaviours and/or less disclosure of bullying among some children and their parents.

Finally, three of the SEN groups have quite high percentages of reports of being bullied from both children's and parents' reports, suggesting that bullying is more of a difficulty for these children. They are children with behavioural, emotional or social difficulties (14.8% with both child and parent reports), general learning difficulties or disabilities (15.0%), and multiple or unclassified SEN (14.9%).

4.5   Achievement and expected attainment

This section examines measures related to children's academic achievement, and their future expectations regarding education and occupations. First, we look at children's standardised verbal reasoning and numeric ability test scores (as measured by the Drumcondra Reasoning Tests, DRTs). These are broad measures of cognitive ability. Then, we consider children's expectations for their future education and compare these to parents' expectations for their children's education.

In considering the results of children's test scores, it is important to bear in mind that these broad assessments of verbal reasoning and numeric ability were not explicitly designed for children with special educational needs. Moreover, the analyses presented here do not consider the progress that children have made over time. We examine progress in Chapter 5.

4.5.1   Verbal reasoning and numeric ability

At age 13 as part of GUI Wave 2, children completed short standardised tests of verbal reasoning and numeric ability. For the present analysis, the test scores have been scaled to have a mean of 100 and standard deviation of 15 across all children. In other words, about two-thirds of children have verbal reasoning scores ranging between 85 and 115. This was done to facilitate direct comparisons across the two tests.

Table 4.18 shows the mean verbal reasoning (VR) and numeric ability (NA) test scores by SEN group. Note that overall, about 6% of children who took part in Wave 2 of GUI are missing test scores. More children with special educational needs (11–13%) than without special educational needs (about 4%) are missing test scores. The reasons for this are unknown, since we don't know whether children were exempt from taking part in the tests. In any case, additional caution should be exercised in interpreting the results of children with special educational needs, particularly those where the numbers in the SEN groups are smaller. In particular, the numbers of children with Autistic Spectrum Disorders, physical or sensory disabilities, and multiple or unclassified SEN are small and test participation rates for these three groups are less than 85% so it cannot be inferred that these results are representative of these groups of children.

Comparing children with and without special educational needs (the top part of table 4.18), it can be seen that there is quite a large difference of about 10 points in both VR and NA test scores. The bottom portion of the table shows that the mean test scores vary across specific SEN groups. In the case of both VR and NA, children with general learning disabilities or difficulties have mean scores that are lower (17 or so points) than children with no special educational needs, which is a very large difference. On the other hand, children with physical or sensory

disabilities and multiple or unclassified SEN have mean VR and NA scores that do not differ significantly from those of children with no special educational needs.

On the verbal reasoning test, four of the SEN groups have significantly lower scores than children with no SEN (i.e. children with general learning difficulties or disabilities, specific learning difficulties or speech and language difficulties, SEN at Age 9 only, and behavioural, emotional or social difficulties), while the mean scores of three groups are statistically the same as children with no special educational needs (children with physical or sensory disabilities, Autistic Spectrum Disorder, and multiple or unclassified SEN).

The mean scores on the numeric ability test are similar to those for the verbal reasoning test except that children with Autistic Spectrum Disorders have significantly lower scores (while their scores on VR did not differ to those of children without SEN).

Table 4.18: Mean Verbal Reasoning and Numeric Ability test scores, by SEN group

Group	Verbal Reasoning (VR)			Numeric Ability (NA)		
	N (% with test score)	Mean	SD	N (% with test score)	Mean	SD
Children without special educational needs	5300 (96.2)	102.44	14.24	5291 (96.1)	102.44	14.69
Children with special educational needs	1791 (88.8)	**92.79**	14.87	1750 (86.7)	**92.62**	13.44
All children	**7091 (94.2)**	**100.00**	**15.00**	**7041 (93.6)**	**100.00**	**15.00**
Of those with any SEN...						
Behavioural, emotional or social difficulties	273 (88.6)	**94.42**	15.79	263 (85.4)	**93.74**	14.07
General learning difficulties or disabilities	163 (87.6)	**85.40**	11.18	158 (84.9)	**85.21**	10.30
Specific learning difficulties or speech and language difficulties	553 (91.9)	**90.70**	13.64	530 (88.0)	**91.44**	12.38
Autistic Spectrum Disorders	70 (67.3)	98.80	14.48	70 (67.3)	**95.54**	13.97
Physical/sensory disabilities that impact on daily life	46 (82.1)	100.72	15.25	46 (82.1)	99.64	13.49
Multiple or Unclassified SEN	73 (76.8)	97.40	15.84	72 (75.8)	97.34	14.10
SEN Age 9 only	613 (91.9)	**94.09**	15.24	612 (91.8)	**93.67**	13.77

434 children (5.8%) are missing VR test scores (3.7% of children with no SEN and 11.3% of children with any SEN). 484 children (6.4%) are missing NA test scores (3.9% of children with no SEN and 13.3% of children with any SEN).

Note. Data are weighted by the Wave 2 sample weight.

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Table 4.19 shows the VR scores of children in each SEN group, this time split into standard deviation units. This provides more information on the distribution of scores. Usually, about two-thirds of children have a score on a standardised test such as this one within one standard deviation of the mean (that is, 85 to 115 score points), while 95% of children have scores within two standard deviations of the mean (70 to 130 score points). Scores lower than 85 and higher than 115 can be viewed as *low* and *high* scores, respectively, while scores lower than 70 and higher than 130 can be viewed as *very low* and *very high* scores, respectively. Across all children, 18.4% had a high VR score, and a similar percentage (17.1%) had a low VR score.

Consistent with Table 4.18, Table 4.19 reveals considerable variation in VR scores across SEN groups. About 21.2% of children with no special educational needs had high scores, compared to 9.9% of children with special educational needs. However, 20–21% children with physical or sensory disabilities, and with multiple or unclassified SEN, achieved high VR scores, though it should be borne in mind that numbers of children in these groups are small and response rates lower than for children without SEN. In contrast, just 2.6% of children with general learning disabilities or difficulties achieved a high VR score.

At the other end of the distribution, 11.3% of children with no special educational needs achieved a low score, compared to 34.4% of children with special educational needs. Low scores were particularly prevalent among children with general learning disabilities or difficulties (55.0%), and less prevalent among children with Autistic Spectrum Disorders (14.6%) and with physical or sensory disabilities (11.7%).

The variation in the distribution of VR scores shown in Table 4.19 is statistically significant. The measure of association[55] between the distribution of VR scores and SEN group is moderate. Therefore, although VR scores vary substantially across SEN groups, most of the variation in these scores is between individual children rather than SEN groups.

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[55]   Eta^2 .070.

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Table 4.19: Distribution of Verbal Reasoning (VR) test scores, by SEN group

Group	N (% with test score)	> 2 SD below mean	1-2 SD below mean	Within 1 SD of mean	1-2 SD above mean	>2 SD above mean	Total
Children without special educational needs	5300 (96.2)	0.6	10.7	67.5	18.3	2.9	100.0
Children with special educational needs	1791 (88.8)	3.2	31.1	55.7	8.7	1.2	100.0
All children	**7091 (94.2)**	**1.3**	**15.8**	**64.5**	**15.9**	**2.5**	**100.0**
Of those with any SEN...							
Behavioural, emotional or social difficulties	273 (88.6)	3.6	29.3	54.3	12.1	0.7	100.0
General learning difficulties or disabilities	163 (87.6)	4.3	50.7	42.4	2.0	0.6	100.0
Specific learning difficulties or speech and language difficulties	553 (91.9)	3.4	34.3	55.0	6.9	0.4	100.0
Autistic Spectrum Disorders	70 (67.3)	2.1	12.6	70.8	13.4	1.2	100.0
Physical/sensory disabilities that impact on daily life	46 (82.1)	0.0	11.7	68.2	13.5	6.6	100.0
Multiple or Unclassified SEN	73 (76.8)	0.7	29.9	48.3	21.2	0.0	100.0
SEN Age 9 only	613 (91.9)	3.3	27.6	58.7	8.1	2.2	100.0

434 children (5.8%) are missing VR test scores (3.7% of children with no SEN and 11.3% of children with any SEN).

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 238.376, df = 1, p < .001

Table 4.20 shows the distribution of NA scores of children in each SEN group, and can be interpreted in a similar fashion as Table 4.19. Across all children, 17.4% had a high NA score, while 16.7% had a low NA score. Of children with special educational needs, just 6.7% had a high NA score which is about one-third the amount of children with no SEN (20.9%). About three in 10 children with any SEN (30.2%) had a low NA score, compared to 12.2% of children with no SEN. Low NA scores were particularly prevalent among children with general learning disabilities or difficulties (52.2%) and much less prevalent among children with physical or sensory disabilities (9.1%).

The variation in the distribution of NA scores shown in Table 4.20 is statistically significant. The measure of association[56] between the distribution of NA scores and SEN group, is like that for the VR scores above and is quite moderate. Therefore, once again, although NA scores vary quite a bit across SEN groups, most of the variation in scores is between individual children rather than SEN groups.

Table 4.20: Distribution of Numeric Ability (NA) test scores, by SEN group

Group	N (% with test score)	> 2 SD below mean	1-2 SD below mean	Within 1 SD of mean	1-2 SD above mean	>2 SD above mean	Total
Children without special educational needs	5291 (96.1)	0.3	11.9	66.9	17.0	3.9	100.0
Children with special educational needs	1750 (86.7)	2.3	27.9	63.1	5.2	1.5	100.0
All children	**7041 (93.6)**	**3.7**	**18.2**	**67.1**	**9.9**	**1.1**	**100.0**
Of those with any SEN...							
Behavioural, emotional or social difficulties	263 (85.4)	2.2	49.9	45.4	2.6	0.0	100.0
General learning difficulties or disabilities	158 (84.9)	2.4	33.1	60.6	3.8	0.1	100.0
Specific learning difficulties or speech and language difficulties	530 (88.0)	0.0	19.0	71.6	6.5	2.9	100.0
Autistic Spectrum Disorders	70 (67.3)	0.0	9.1	71.9	19.0	0.0	100.0
Physical/sensory disabilities that impact on daily life	46 (82.1)	0.0	24.0	67.5	4.5	3.9	100.0
Multiple or Unclassified SEN	72 (75.8)	2.3	24.9	66.0	4.0	2.8	100.0
SEN Age 9 only	612 (91.8)	0.8	15.9	66.0	14.1	3.3	100.0

484 children (6.4%) are missing NA test scores (3.9% of children with no SEN and 13.3% of children with any SEN).

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 231.527, df = 1, p < .001

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56   Eta^2 .064.

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4.5.2   Expected educational attainment

Both children and parents were asked how far the child expected to go in formal education. This section considers their responses and provides a comparison between children's and parents' expectations. Chapter 5 compares parental educational expectations between ages 9 and 13.

It should be noted that the wording of the question about educational expectations was not the same for children and their parents. Children were asked "What is the highest qualification you expect to get by the time you finish your education?" (Junior Cert., Leaving Cert., Certificate or Diploma (including PLC, apprenticeship), Degree or higher degree). Parents were asked a more detailed version of the question: "Taking everything into account, how far do you expect your child will go in his/her education or training?" (Junior Cert. or equivalent, Leaving Cert. or equivalent, Apprenticeship or trade, Diploma/Certificate, Degree, Postgraduate/Higher degree, Don't know).

In order to allow comparisons between children's and parents' responses, parents' responses were recoded to match children's, i.e. to four levels – Junior Cert., Leaving Cert., Apprenticeship, Certificate or Diploma, and Degree/Higher degree.[57]

Table 4.21 shows the percentages of *children* expecting to attain each of these four levels of education, by SEN group. Across all children, just over half (50.6%) expected to attain a degree or higher degree, while just over a quarter (26.4%) expected to finish their formal education at or before Leaving Cert. level. A further quarter or so (23.0%) expected to attain an apprenticeship, certificate or diploma. There are quite marked differences between children with and without special educational needs (top part of Table 4.21). For example, about 56% of children with no special educational needs expected to attain a degree, compared to 36% of children with special educational needs. In contrast, while about one in five children with no special educational needs (20.9%) expected to attain up to the Leaving Cert., about two in five children with special educational needs (41.7%) expected to attain this level of education. However, similar percentages of children with and without special educational needs (22–23%) expected to attain an apprenticeship, certificate or diploma.

Educational expectations were particularly low among children with general learning disabilities or difficulties and with Autistic Spectrum Disorders.

There is a significant association[58] between children's educational expectations and SEN group. The measure of association[59] between the distribution of numeric ability scores and SEN group indicates that 5.6% of the variation in children's educational expectations is explained by SEN group. This is a moderate amount, and implies that other factors have a role in explaining the variation in children's educational expectations.

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[57]   In the case of parents' responses, 'Don't know' was treated as missing.

[58] χ^2 linear by linear = 223.397, df = 1, p < .001.

[59]   Eta^2, .056.

Table 4.21: Children's educational expectations, by SEN group

Group	N	Junior Cert.	Leaving Cert.	Apprenticeship, Cert., or Dip.	Degree or Higher degree	Total
Children without special educational needs	5405	2.2	18.7	23.2	55.9	100.0
Children with special educational needs	1921	9.4	32.3	22.4	35.9	100.0
All children	**7326**	**4.1**	**22.3**	**23.0**	**50.6**	**100.0**
Of those with any SEN...						
Behavioural, emotional or social difficulties	291	10.4	29.4	19.9	40.2	100.0
General learning difficulties or disabilities	178	17.1	36.8	17.0	29.1	100.0
Specific learning difficulties or speech and language difficulties	577	10.6	29.8	28.6	30.9	100.0
Autistic Spectrum Disorders	92	6.0	44.7	18.8	30.5	100.0
Physical/sensory disabilities that impact on daily life	51	8.8	28.0	34.6	28.6	100.0
Multiple or Unclassified SEN	85	9.2	26.2	15.3	49.2	100.0
SEN Age 9 only	647	6.3	34.1	19.8	39.8	100.0

199 children are missing data for this question.

Note. Data are weighted by the Wave 2 sample weight.

Table 4.22 shows parents' educational expectations for their children, by SEN group. Overall, almost four in five parents (78.6%) expected their child to obtain a degree or higher degree, 13.7% expected their child to complete an apprenticeship, certificate or diploma, and just under 8% expected them to complete up to Leaving Cert. level of formal education. Hence, overall, parental educational expectations are higher than those of children.

Consistent with children's reports, however, parents of children with any SEN had lower educational expectations than parents of children with no SEN: while 85% of parents of children with no SEN expected their child to complete a degree or higher degree, this was 60% among parents of children with any SEN. Also, about four times as many parents of children with any SEN (17.9%) compared to parents of children with no SEN (4.2%) expected their child to complete formal education at or before Leaving Cert. level. In contrast to children's reports, it was more common for parents of children with any SEN to expect their child to complete an apprenticeship, certificate or diploma (22.3%) than parents of children with no SEN (10.6%). Parental educational expectations were lowest among children with GLDD.

There is a significant association between parents' educational expectations and SEN group. The measure of association[60] between the distribution of numeric ability scores and SEN group indicates that 7.4% of the variation in parents' educational expectations is explained by SEN group. Again, in a similar vein to children's educational expectations, this is a moderate amount of variation, which indicates that other factors influence parents' educational expectations.

Table 4.22: Parents' reports of educational expectations for their children, by SEN group

Group	N	Junior Cert.	Leaving Cert.	Apprenticeship, Cert., or Dip.	Degree or Higher degree	Total
Children without special educational needs	5422	0.1	4.1	10.6	85.3	100.0
Children with special educational needs	1927	1.3	16.6	22.3	59.8	100.0
All children	**7349**	**0.4**	**7.4**	**13.7**	**78.6**	**100.0**
Of those with any SEN...						
Behavioural, emotional or social difficulties	291	1.2	17.4	21.1	60.4	100.0
General learning difficulties or disabilities	181	2.2	28.7	34.6	34.5	100.0
Specific learning difficulties or speech and language difficulties	579	1.6	17.3	23.3	57.8	100.0
Autistic Spectrum Disorders	79	3.0	9.5	23.4	64.1	100.0
Physical/sensory disabilities that impact on daily life	56	0.0	11.9	9.3	78.8	100.0
Multiple or Unclassified SEN	86	2.5	14.5	19.0	64.1	100.0
SEN Age 9 only	658	0.6	13.9	20.0	65.5	100.0

176 children are missing data for this question.

Note. Data are weighted by the Wave 2 sample weight.

χ^2 linear by linear = 310.911, df = 1, p < .001

Table 4.23 offers a comparison between children's own educational expectations, and parents' expectations for their child. Responses were recoded according to whether the child's expectation was higher than the parent's, the expectations were the same, or the parent's expectation was higher than the child's. As suggested by Tables 4.21 and 4.22, about 39% of children had parents with higher educational expectations for them than they had for themselves. In a little over half of children (54.6%), child and parental educational expectations matched, while in about 6% of cases, children had higher educational expectations for themselves than their parents had.

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[60]   Eta^2, .074.

Table 4.23: Comparisons of children's and parents' educational expectations, by SEN group

Group	N	Child's expectation is higher	Child's and parent's expectations are the same	Parent's expectation is higher	Total
Children without special educational needs	5323	4.8	57.8	37.4	100.0
Children with special educational needs	1854	10.7	45.4	43.9	100.0
All children	**7177**	**6.3**	**54.6**	**39.1**	**100.0**
Of those with any SEN...					
Behavioural, emotional or social difficulties	276	12.3	47.7	40.1	100.0
General learning difficulties or disabilities	185	16.8	44.3	39.0	100.0
Specific learning difficulties or speech and language difficulties	555	9.2	45.7	45.2	100.0
Autistic Spectrum Disorders	79	11.7	41.1	47.2	100.0
Physical/sensory disabilities that impact on daily life	51	1.0	40.7	58.2	100.0
Multiple or Unclassified SEN	81	11.1	55.5	33.4	100.0
SEN Wave 1 only	637	10.3	44.0	45.7	100.0

348 children are missing data on either or both questions on parental and child educational expectations.

Note. Data are weighted by the Wave 2 sample weight.

In comparing children with and without special educational needs, it is very interesting to note that child-parent educational expectations matched more frequently among children without special educational needs (57.8%) than among children with special educational needs (45.4%). Across SEN groups, parent-child reports were more likely to match among children with multiple or unclassified SEN (55.5%) than other groups. Also, children with physical or sensory disabilities were the most likely to have parental educational expectations that were higher than their own (58.2%). The variations in children's and parents' educational expectations across SEN groups are statistically significant.[61]

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[61] $\chi^2 = 161.155$, df = 14, p < .001.

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4.6 Summary profiles of outcomes and inter-relationships between outcomes

This section summarises the percentages of children in each of the SEN groups who are at specific levels on key outcomes examined in this chapter. It also considers the extent to which some of the outcomes are inter-related.

Table 4.24 presents a summary profile of each of the SEN groups on 13 of the outcomes considered in this chapter. Looking across rows allows comparisons to be drawn about variations in each outcome, while looking down columns provides information on the particular SEN group of interest.

Cells are colour coded for ease of interpretation, with larger differences between each SEN group and the no-SEN group on each outcome indicated by darker shades. All outcomes, with the exception of bullying and being bullied, are expressed in positive terms, i.e. the higher the percentage of children, the more positive the finding.

Note that the cut-points (5–10%, 10–20% and more than 20%) are arbitrary: the table is intended to provide only broad information on the profile of each group. It should also be borne in mind that response rates on the achievement tests were less than 85% in some groups – in particular, children with ASD, with physical or sensory disabilities, and with multiple or unclassified SEN.

The *outcome* on which all SEN groups are doing least well in comparison to the no-SEN group is on the index of adjustment to post-primary school. Generally, there is quite a lot of variation in the profiles of children across outcomes, particularly those relating to friendships and achievement on the verbal reasoning and numeric ability tests.

The *group* of children who are doing least well on the outcomes are children with BESD. In contrast, children with SEN at age 9 only are doing quite well on a majority of the outcomes in comparison with children with no SEN in either wave. Large variation in the profiles of each SEN group is apparent and the information may be useful as a starting point in identifying ways in which the needs of these groups of children might be addressed.

Table 4.24: Summary profile of outcomes of children at age 13, by SEN group

Outcome	Broad SEN Status		Specific SEN Group							All children
	Children without SEN	Children with SEN	BESD	GLDD	Spec learn diff/ Speech & Lang diff	ASD	Phys/ sens dis impact on daily life	Multiple or Unclass SEN	SEN Wave 1 only	
% average or higher on adjustment to post-primary school[59]	78.6	55.3	40.0	45.7	54.6	22.5	47.2	52.2	70.3	72.6
% liking school[60]	90.4	82.6	78.1	76.3	86.3	90.7	77.5	91.0	81.2	88.4
% low to moderate absenteeism rates over the past 12 months	91.5	83.5	79.3	80.4	84.1	84.2	79.8	77.9	86.7	89.4
% average or lower levels of disciplinary issues[61]	80.6	70.6	58.6	71.2	71.5	76.4	83.5	84.2	71.4	78.0
% average or higher on freedom from anxiety scale[62]	38.1	29.5	24.5	31.0	30.2	28.3	22.6	17.7	33.1	35.8
% average or higher on happiness and satisfaction scale[63]	39.9	33.5	28.5	34.5	38.2	31.0	37.6	16.7	33.5	38.2
% reporting low scores on Mood and Feelings Q indicating higher mood[64]	95.8	90.1	83.4	84.1	94.5	90.1	88.3	90.7	90.6	94.3
% average or higher trust of parents and peers[65]	41.5	31.1	30.5	30.1	25.9	20.2	48.6	21.6	37.5	38.8
% average or lower feelings of alienation from parents and peers[66]	77.3	69.8	53.5	69.5	72.6	72.9	75.2	70.1	73.5	75.4
% bullied in the past three months[67]	2.8	8.2	14.8	15.0	6.4	8.5	3.8	14.9	4.4	4.3
% average or higher verbal reasoning score[68]	88.7	65.7	67.1	45.0	62.3	85.3	88.3	69.4	69.1	82.9
% average or higher numeric ability score[69]	87.8	69.8	47.9	64.5	81.0	90.9	76.0	72.8	83.3	78.1
% of parents expecting some post-secondary education for their child	95.8	82.1	81.4	69.1	81.1	87.5	88.1	83.0	85.5	92.2

Cells are colour coded as follows:

5.0 to 10.0 percentage points below children without SEN	5.0 to 10.0 percentage points above children without SEN
10.1 to 20.0 percentage points below children without SEN	10.1 to 20.0 percentage points above children without SEN
More than 20 percentage points below children without SEN	

Note. All outcomes, with the exception of bullying and being bullied, are expressed in positive terms, i.e. the higher the percentage of children without SEN, the higher the percentage of children, the more positive the finding.

See table footnotes on next page.

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Table 4.25 shows the inter-relationships between 10 of the outcomes considered in this chapter that were measured as indices or scales. For all children in the study, the patterns of these correlations are similar across children with and without special educational needs (not shown here). This provides some information on the interdependencies between outcomes, but it cannot be used to infer that one outcome causes another.

A majority of the correlations in Table 4.25 are in the weak to moderate range, and although the effects are not trivial, they are discernible but small. There are some moderate to strong correlations, which one might expect, extending up to a quite substantial difference. These include the relationships between the two wellbeing sub-scales and the Mood and Feelings measure, and the two achievement tests. Some of these are positively correlated, i.e. if one score increases, the other score also increases, or a negatively correlated, i.e. if one score decreases, the other score increases. The two wellbeing sub-scales are strongly correlated (positively) with each other, each of the two wellbeing sub-scales and the Mood and Feelings measure are strongly correlated (negatively), the Mood and Feelings measure is strongly correlated with the trust scale (negatively), and the Numeric Ability test is strongly correlated with the Verbal Reasoning test (positively).

The moderate correlations between the trust and alienation scales on one hand and wellbeing on the other are indicative of complex, possibly mutually reinforcing relationships, between children's wellbeing and friendships.

The first column in Table 4.25, which shows the correlations between adjustment to post-primary school and compares it to all other outcomes, is noteworthy in that it suggests that successful adjustment is relevant to children's social, emotional and educational wellbeing. All outcomes have either a weak or weak to moderate correlation with the index of adjustment to post-primary school, implying that successful adjustment to post-primary school increases children's wellbeing, or that high wellbeing helps with school adjustment. It is also noteworthy that, in this index, adjustment to post-primary school was the outcome which was consistently less positive among children with SEN compared to the no-SEN group (Table 4.25).

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[62]   Index of adjustment to post-primary school, a score 45 of higher, M=50, SD=10.

[63]   % Liking school a bit, quite a bit, or very much.

[64]   % with score of 55 or lower on index of disciplinary issues, M=50, SD=10.

[65]   % with score of 45 or higher on Piers-Harris freedom from anxiety scale, M=50, SD=10.

[66]   % with score of 45 or higher on Piers-Harris happiness and satisfaction scale, M=50, SD=10.

[67]   % below 95th percentile on the Mood and Feelings Questionnaire (lower scores = higher mood).

[68]   % with score of 45 or higher on Inventory of Parent and Peer Attachment (IPPA) trust scale, M=50, SD=10.

[69]   % with score of 55 or lower on Inventory of Parent and Peer Attachment (IPPA) alienation scale, M=50, SD=10.

[70]   % bullied, with child and parent reports combined.

[71]   % with score of 85 or higher on verbal reasoning test, M=100, SD=15.

[72]   % with score of 85 or higher on numeric ability test, M=100, SD=15.

Table 4.25: Inter-relationships between continuous outcome measures at age 13, overall and by SEN status

All children	Adjust. to post-primary school	No. days absent past 12 months	Discip. issues	P-H freedom from anxiety scale	P-H happiness and satisfaction scale	Mood and Feelings Scale	IPPA trust scale	IPPA alienation scale	Verbal reasoning test	Numeric ability test
Adjustment to post-primary school										
No. days absent past 12 months	-.150**									
Disciplinary issues	-.177**	.149**								
P-H freedom from anxiety scale	.183**	-.076**	-.051**							
P-H happiness and satisfaction scale	.161**	-.055**	-.154**	.656**						
Mood and Feelings Scale	-.181**	.090**	.232**	-.585**	-.521**					
IPPA trust scale	-.115**	.030*	.162**	-.438**	-.355**	.468**				
IPPA alienation scale	.129**	-.013	-.145**	.227**	.270**	-.312**	-.330**			
Verbal reasoning test	.154**	-.064**	-.098**	.064**	.006	-.044**	-.035**	.046**		
Numeric ability test	.210**	-.137**	-.149**	.106**	.057**	-.097**	-.068**	.058**	.565**	

** = Correlation is significant at the 0.01 level (2-tailed).

* = Correlation is significant at the 0.05 level (2-tailed).

Cells are colour coded as follows:

Absolute values up to .15: weak

Absolute values from .16 to .24: weak-moderate

Absolute values from .25 to .44: moderate

Absolute values .45 and above: strong

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4.7   Chapter summary

This chapter offered a detailed description of the outcomes of children with and without SEN at age 13. A summary of key findings follows.

A majority of 13 year olds who took part in Wave 2 of GUI had *settled well into post-primary school*, according to their parents, although slightly more children without special educational needs (94%) than with special educational needs (80%) had settled in well. Looking at the variation in the responses on the transition to post-primary school between children with and without special educational needs, differences may be more closely related to academic and curricular demands than to social demands.

On an index of adjustment to post-primary school, children with special educational needs had a lower mean score than children without special educational needs. Children's level of adjustment to post-primary school is weakly and positively associated with their verbal reasoning, numerical ability and wellbeing scores, meaning that successful adjustment to post-primary school is related to higher verbal reasoning and numeric ability test scores, and greater wellbeing.

Asked about *how they felt about post-primary school*, more children with special educational needs (17%) than children without special educational needs (10%) indicated a dislike of school. Among children with special educational needs, liking of school was lowest among children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, physical or sensory disabilities that impact on daily life, and children with SEN at age 9 only.

Across all children, *levels of interest in school subjects* depended on the subject: while 89% expressed an interest in English, 80% were interested in mathematics and only 68% were interested in Irish. Issue is that compared to English and Maths, Irish has higher levels of dislike for children with SEN in general, and there is variation by SEN group, both in numbers taking the subject, and those disliking it.

Attendance rates over the past 12 months were lower among children with special educational needs than children with no special educational needs. Relatively high absence rates were found for children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, physical or sensory disabilities, and multiple or unclassified SEN. Across all children, a large majority (80%) of absences were due to illness or injury, and while the variation in reasons for absences is not very pronounced across the SEN groups, a higher percentage of children with special educational needs had absences noted for child refusal, while the percentage of children without special educational needs absent from school was higher for a holiday or event.

On an index of disciplinary issues, with higher scores indicating more frequent issues, children with special educational needs had a mean score that was higher than children without special educational needs. This is a small to moderate difference, which is meaningful. Children with behavioural, emotional or social difficulties had the highest mean score on this index. On the other hand, children with Autistic Spectrum Disorders, physical or sensory disabilities, and multiple/unclassified SEN had mean scores on the index of disciplinary issues that were statistically the same as children with no special educational needs.

Comparisons of children's wellbeing *(Piers-Harris) scores* indicated that children with special educational needs had significantly lower scores than children with no special educational needs on the overall wellbeing scale as well as on all six wellbeing subscales. Of children with special educational needs, wellbeing scores were particularly low among children with behavioural, emotional or social difficulties, general learning disabilities and difficulties, Autistic Spectrum Disorders, and multiple or unclassified SEN.

At age 13, children were asked a series of questions about their mood and feelings (the *Mood and Feelings Questionnaire*; MFQ). The same four groups emerged as having the highest scores on this measure (and hence the lowest mood) as for the wellbeing measures. It is of concern that almost four times as many children with behavioural, emotional or social difficulties and general learning disabilities or difficulties than children without special educational needs had an MFQ score that was in the lowest range, indicating very low mood among about one in six children in both of these groups.

Some information about the *quality of friendships* of children was gathered in the child questionnaire. Children with special educational needs had a mean score on the *trust in peers* scale that was almost three points lower than the mean score of children without special educational needs. Children with special educational needs also had a mean score on the *alienation from peers* scale that was about two points higher than that of children without special educational needs. These findings, which are of a small to moderate nature, suggest slightly lower quality of friendships among children with special educational needs than without special educational needs.

Measures of wellbeing and mood (Piers-Harris and MFQ scores) and friendship quality (IPPA alienation and trust scales) are inter-related in such a way as to suggest complex, mutually reinforcing associations between children's sense of wellbeing, mood, and quality of friendships. However, further analysis would be needed to better understand these relationships.

At age 13, 10% of all children reported that they had *been bullied* during the past three months. Twice as many children with special educational needs (16%) than without special educational needs (8%) reported having been bullied. Experiencing bullying was most common among children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, and multiple or unclassified SEN. Children's perceived reasons for being bullied were generally similar across 'SEN' and 'no SEN' groups. However, of those bullied, children with special educational needs were about four times as likely to say that they had been bullied because of a physical or learning difficulty or disability.

Comparisons of children's and parents' reports of the child being bullied indicated that close to 3% of children without special educational needs had reports of bullying from both parents and children, compared with a little over 8% of children with special educational needs. This suggests that, from the combined views of children and their parents, bullying of children with special educational needs is almost three times higher than among children without special educational needs.

It should be noted that the *verbal reasoning (VR) and numeric ability (NA) tests* administered to children in GUI were not designed for children with special educational needs and that more children with special educational needs (about 12%) than without special educational needs (about 4%) were missing test scores. In particular, the test scores of children with Autistic Spectrum Disorders, physical or sensory disabilities, and multiple or unclassified SEN should be interpreted cautiously. Children with special educational needs had mean scores on both tests that are about 10 points lower than those of children without special educational needs, which is a substantial difference, moderate to large in size.

While age 13, children were asked the *highest educational qualification* that they expected to attain. Children with special educational needs reported lower educational expectations than children without special educational needs in some respects. For example, while 56% of children without special educational needs expected a degree, just 36% of children with special educational needs expected a degree. On the other hand, the percentages of children with (22%) and without special educational needs (23%) expecting an apprenticeship or post-school certificate or diploma were very similar. Of course, this analysis does not provide information on the extent to which children's educational expectations may be suited to their current and future strengths and interests.

Children's parents had higher educational expectations for their child than children themselves. For example, 79% of all parents expected their child to attain a degree, compared to 51% of all children. Consistent with children's own reports, more parents of children without special educational needs (85%) than with special educational needs (60%) expected their child to attain a degree. However, twice as many parents of children with special educational needs (22%) than without special educational needs (11%) expected their child to attain an apprenticeship or post-school certificate or diploma. Interestingly, there was a greater degree of concordance in parents' and children's educational expectations among children with no special educational needs than with special educational needs.

The chapter concluded with a summary profile of outcomes of children in each SEN group. The outcome on which children with special educational needs tended to do worst relative to their no-SEN counterparts was adjustment to post-primary school, while the SEN group with the least favourable profile across outcomes was children with BESD. On the other hand, children with SEN at age 9 only were doing relatively well on the outcomes considered. The summary profile confirms the wide variations in the strengths and needs of the SEN groups and may be useful as a tool to guide initial policy formulation. For example, it could be used to guide decisions about universal and targeted supports for transitioning from primary to post-primary school among children with SEN.

Finally, many of the outcomes that were measured as scales or indices considered in this chapter are inter-related, some only weakly (for example, adjustment to post-primary school is associated with all other outcomes), and others more strongly, as one might expect (for example, scores on the two achievement tests; measures of children's well-being). Children's adjustment to post-primary school should be explored further due to its relationships with a range of other outcomes which cover multiple aspects of children's lives, including social, emotional and educational.

5.   How have children with special educational needs progressed between ages 9 and 13?

5.1   Chapter overview

When examined together, data from children at age 9 and age 13 provide a valuable opportunity to track progress of children who took part in both waves. Outcomes at age 13 were examined in detail in Chapter 4. Some of the outcomes discussed in Chapter 4 can be compared across waves, since information on them was gathered both at age 9 and at age 13. This chapter examines progress and change under the three overarching themes as follows:

- Engagement and attendance

    - Days absent from school

    - Liking of school

- Happiness and wellbeing

    - Total wellbeing (Piers-Harris) scores

    - Parents' reports of their child being bullied

    - Number of close friends

- Achievement and expected attainment

    - Verbal Reasoning (VR) test scores

    - Numeric Ability (NA) test scores

    - Parental educational expectations.

Before considering progress or change on each outcome, we provide a brief description of how each outcome was measured at age 9 and 13, highlighting any differences and implications that these may have for interpreting the results.

The analyses of progress or change over time begin with a descriptive comparison of that outcome at age 9 and age 13. Then, a regression-based approach is taken. That is, we compare differences on the outcome between children without special educational needs and in each of the seven SEN groups at age 13, before and after taking account of how that group fared on that outcome at age 9. This approach allows us to determine whether children in each of the seven groups, relative to children with no special educational needs, are doing better than, the same as, or less well than expected, given their situation at age 9.

The exact manner in which results are reported depends on whether the outcome is measured by a categorical (i.e. groups of children, for example bullied–not bullied) or continuous variable (i.e. on a scale, for example test scores).

For regression analyses of continuous outcomes, we report the age 13 *score difference* between children with and without special educational needs before and after taking account of their scores at age 9. Continuous measures are:

- Attendance (measured as days missed from school over 12 months)

- Total wellbeing (Piers-Harris) scores (a scale with a mean of 46.3 and standard deviation of 8.5 at age 9, and a mean of 46.3 and a standard deviation of 8.7 at age 13)

- VR test scores (a scale with a mean of 100 and standard deviation of 15)

- NA test scores (a scale with a mean of 100 and standard deviation of 15)

- Number of close friends

- Parental educational expectations (expressed in approximate years of education).

For regression analyses of categorical outcomes, we report the *likelihood (or odds)* of that outcome before and after taking account of the outcome at age 9. Categorical measures are:

- Liking school (like–do not like)

- Interest in school subjects (high interest–medium or low interest)

- Being bullied (bullied–not bullied).

Before introducing the results, however, we provide a description of attrition, or loss of participants, between ages 9 and 13.

5.2　Loss of participants ages 9 and 13

Of all children who took part in GUI at age 9, 86.0% took part when they were age 13. This implies an attrition (loss) rate of 14.0%.[73] This is a very high follow-up rate for longitudinal surveys of this kind. Nonetheless, it is worth examining characteristics of children who did and did not take part at age 13 in order to see if they differ. For example, if fewer children with special educational needs did not take part at age 13 than children without special educational needs, any findings regarding children with special educational needs on the basis of age 9–age 13 comparisons will be less robust than those for children without special educational needs.

The top part of Table 5.1 shows the percentages of children with and without special educational needs (classified at age 9) who did and did not take part at age 13.

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[73]　This is the *weighted* attrition rate. The *unweighted* rate is lower, at 12.2%.

Table 5.1: Follow-up and attrition rates for GUI at age 13 (Wave 2), by SEN status and gender

All children	Not in Wave 2		In Wave 2		Total	
	N	%	N	%	N	%
No special educational needs	785	12.7%	5402	87.3%	6187	100.0%
Special educational needs	412	17.3%	1969	82.7%	2381	100.0%
Boys	**Not in Wave 2**		**In Wave 2**		**Total**	
	N	%	N	%	N	%
No special educational needs	348	11.7%	2631	88.3%	2979	100.0%
Special educational needs	242	17.3%	1157	82.7%	1399	100.0%
Girls	**Not in Wave 2**		**In Wave 2**		**Total**	
	N	%	N	%	N	%
No special educational needs	436	13.6%	2771	86.4%	3207	100.0%
Special educational needs	170	17.3%	813	82.7%	983	100.0%

($\chi^2 = 30.478$, df = 1, p < .001)

Table 5.1 shows that, of children classified as having special educational needs at age 9, 82.7% took part in Wave 2 at age 13. This is lower than the follow-up rate for children without special educational needs (87.3%), and is statistically significant. The pattern of participation/non-participation across children with and without special educational needs is similar for boys and girls (lower two parts of Table 5.1). Even though follow-up rates are well in excess of 80% for all children, regardless of their SEN status or gender, the higher attrition rate of children who had SEN at age 9 should be borne in mind when interpreting results.

Examining the mean age 9 verbal reasoning, numeric ability and socio-economic index (SEI) scores of children who did and did not take part at age 13, by SEN status, on all three measures, children who took part in Wave 2 at age 13 had significantly higher scores than children who did not take part. The differences are small to moderate in size. This pattern is true both for children with and without special educational needs at age 9. In other words, due to attrition, there is a moderate but statistically significant upward bias in the achievement, wellbeing (Piers-Harris scores) and socio-economic levels of 13-year-old children in GUI in general. This is consistent with what was observed in Chapter 3, i.e. that the sample of 13 year olds in GUI is a little more socio-economically advantaged than the population of children in First and Second year in post-primary schools. See Table A4.9 in Appendix 4.

5.3   Progress and change in engagement and attendance

This section examines changes over time with respect to children's attendance rates and liking of school.

5.3.1   Days absent from school

When their children were both aged 9 and 13, parents were asked how many days their child was absent from school over the past 12 months with response options no days, 1–3 days, 4–6 days, 7–10 days, 11–20 days, and more than 20 days.[74] Parents' responses are directly comparable across waves, since the wording of the question was the same on both occasions.

There is a moderate positive correlation[75] between days absent at ages 9 and 13, implying that children who had more absences at age 9 also had more absences at age 13. A moderate correlation implies that the relationship is evident, but not very substantial in nature. The correlation between days absent across waves is slightly stronger[76] among children with special educational needs than among children without special educational needs. In other words, the attendance rates of children with special educational needs at age 9 are more strongly predictive of their attendance rates at age 13 than they are for children without special educational needs.

Table 5.2 compares changes in absence rates between ages 9 and 13, overall and by SEN status. Looking first at the bottom of the table, it can be seen that, overall, children's absence rates decreased by about half a day (from about 5.55 days to 5.07 days). This decrease is larger for children without special educational needs (0.62 days) than with special educational needs (less than one-tenth of a day). The absence rates of children with special educational needs are significantly higher than those of children without special educational needs at both waves.

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[74]   For the computation of Pearson correlation coefficients and the regression analyses, the response options were recoded as follows to form a pseudo-continuous measure: no days = 0, 1-3 days = 2, 4-6 days = 5, 7-10 days = 8.5, 11-20 days = 15, and more than 20 days = 25.

[75]   Correlation for all children, $r = .306$, $df = 7264$, $p < .001$.

[76]   Correlation for children with SEN, $r = .341$, $df = 1884$, $p < .001$, compared to correlation for children without SEN, Pearson $r = .282$, $df = 5380$, $p < .001$.

Table 5.2: **Changes in days absent from school over the past 12 months between age 9 and age 13, by SEN status**

Change in absence rate Age 9–Age 13	No SEN	Any SEN	All children
Absence increased by 10 or more days	4.5	9.1	5.7
Absence increased by more than 3 and up to 10 days	11.6	13.9	12.2
Absence stayed within 3 days	60.8	52.2	58.6
Absence decreased by more than 3 and up to 10 days	16.3	17.0	16.5
Absence decreased by 10 or more days	6.8	7.9	7.1
Mean days absent (Age 9)	5.30	**6.22**	5.55
Mean days absent (Age 13)	4.68	**6.14**	5.07
N	5455	1962	7417

108 children (1.4%) are missing data on absence rates at age 9 and/or age 13. Figures marked in bold indicate that there is a statistically significant difference between children with no SEN and children with any SEN.

Looking at the upper part of Table 5.2 and the absence rate for all children between ages 9 and 13, 58.6% remained within three days, 17.9% increased by more than three days, and 23.6% decreased by more than three days. Of children with no special educational needs, 16.1% had absence rates that increased by more than 3 days, compared to 23.0% of children with special educational needs. Absence rates decreased by more than three days among 23.1% of children with no special educational needs, and 24.9% of children with special educational needs. The pattern of change in absence rates across children with and without special educational needs is moderately different, and statistically significant.[77] The pattern of results indicates that children with special educational needs showed more variation in absence rates, with proportionately more disimprovement in attendance, than children without special educational needs.

Figure 5.1 shows the expected number of days absent of each SEN group at age 13 relative to the no-SEN group, before and after adjusting for days absent at age 9. In all cases, the differences are statistically significant: in other words, even after accounting for attendance patterns when the children were 9 years old, children in all seven SEN groups have significantly lower attendance rates than children with no special educational needs at age 13 (see Table A4.10 in Appendix 4). For example, looking at the first bar in Figure 5.1, children with behavioural, emotional or social difficulties have an absence rate that is about 2.1 days higher than that of children with no special educational needs at age 13. After accounting for their absence rate at age 9, this drops slightly, to about 1.9 days.

Across all children, for each additional day absent at age 9, an increased absence rate of 0.31 days is predicted (second last row of Table A4.10 in Appendix 4); this simply confirms the positive association between attendance rates at ages 9 and 13.

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[77] $\chi^2 = 80.634$, df = 9, p < .001.

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Figure 5.1: **Results of linear regression with number of days absent at age 13 for each SEN group compared to the no-SEN group, before and after accounting for days absent at age 9**
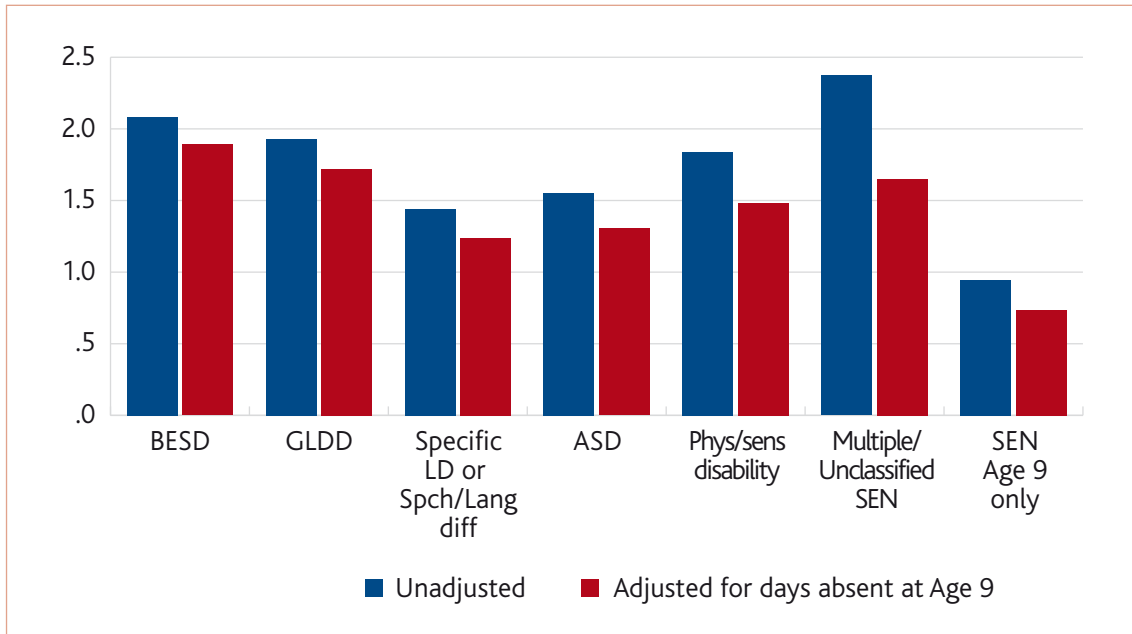
In summary, comparisons of attendance rates between age 9 and 13 show that:

1. Attendance rates at ages 9 and 13 are positively related to one another. That is, children with more days absent from school at age 9 tended also to have more days absent from school at age 13. This relationship is slightly stronger among children with than without special educational needs.

2. Despite this overall positive relationship, there is still a lot of variation in individual children's attendance rates at ages 9 and 13.

3. Children with special educational needs missed significantly more days of school than children without special educational needs at both waves. The difference in days of school missed at age 13 is larger than the difference at age 9 between these two groups. This suggests a relative disimprovement in attendance of children with special educational needs compared to children without special educational needs between ages 9 and 13.

4. Even after accounting for number of days absent from school at age 9, the absence rates of each of the seven SEN groups remained significantly higher than the absence rate of children without special educational needs. Adjusted absence rates were particularly high for children with behavioural, emotional or social difficulties and general learning disabilities or difficulties, relative to children without special educational needs.

5. The reasons for absence have not been examined in these analyses.

5.3.2   Liking of school

At age 9, children were asked "What do you think about school?" with three response options, Always Like It, Sometimes Like it, or Never Like It. At age 13, children were also asked whether or not they liked school, but the wording and response categories were slightly different, i.e. "How do you feel about school in general?" with five response options, I Like it Very Much, I Like it Quite a Bit, I Like it a Bit, I Don't Like it Very Much, or I Hate it. Therefore comparisons need to be interpreted with caution since, although the questions are similar, they are not identical.

In order to compare children's liking of school between ages 9 and 13, we collapsed and mapped response options as follows:

- Age 9 Always like it: Age 13 Like it very much *and* Like it quite a bit

- Age 9 Sometimes like it: Age 13 Like it a bit

- Age 9 Never like it: Age 13 Don't like it very much *and* Hate it.

Based on a comparison of responses to these questions, children were grouped according to whether their liking (or disliking) of school had remained the same, increased, or decreased. Table 5.3 compares these changes in children's liking of school between ages 9 and 13, overall and by SEN status. The table also shows the percentages of children who reported that they didn't like school at ages 9 and 13.

Table 5.3 shows that, across all children, 6.5% reported that they did not like school at age 9, and that this had increased to 11.6% at age 13. More children with special educational needs than without special educational needs reported not liking school at both ages, age 9 (9.4% vs 5.4%) and age 13 (17.4% vs 9.5%). The association between SEN status and like or dislike of school is moderate to strong, and statistically significant at both waves.

Table 5.3: Changes in liking of school between ages 9 and 13, by SEN status

Change in liking school Age 9-Age 13	No SEN	Any SEN	All children
Liking school has decreased	22.9	28.7	24.4
Liking school has remained the same	53.6	50.2	52.7
Liking school has increased	23.5	21.2	22.9
% not liking school Age 9	5.4	9.4	6.5
% not liking school Age 13	9.5	17.4	11.6
N	5379	2019	7398

127 children (1.7%) are missing data on liking of school at Age 9 and/or Age 13.

(χ^2 [Wave 1] = 39.143, df = 2, p < .001; (χ^2 [Wave 2] = 93.803, df = 2, p < .001.

Table 5.4 shows the odds of *not* liking school of each SEN group at age 13 relative to the no-SEN group, before and after adjusting for liking of school at age 9. For example, looking at the second row, children with general learning disabilities or difficulties are almost three times more likely to dislike school than children with no special educational needs at age 13. After accounting for their liking of school at age 9, this drops very slightly.

In five of the seven SEN groups (that is, all but children with Autistic Spectrum Disorders and with multiple or unclassified SEN), children were significantly more likely to dislike school than children without SEN at age 13. In other words, even after accounting for like or dislike of school at the age of 9, children in five of the seven SEN groups had a significantly lower liking of school than children with no special educational needs at age 13.

Across all children, those that expressed a dislike of school at age 9 were 2.2 times more likely to express a dislike of school at age 13 (bottom row of Table 5.4); this confirms the presence of long-term effects in (dis)affect for school. Figure 5.2 illustrates the results shown in Table 5.4.[78]

Table 5.4: Results of logistic regressions of dislike of school at age 13 for each SEN group compared to the no-SEN group, before and after accounting for dislike of school at age 9

[Reference group: Children with no SEN]	Odds ratio (before adjusting for liking of school at age 9)	SE	Odds ratio (after adjusting for liking of school at age 13)	SE
Behavioural, emotional or social difficulties	**2.659**	.148	**2.635**	.149
General learning difficulties or disabilities	**2.957**	.181	**2.900**	.182
Specific learning difficulties or speech and language difficulties	**1.503**	.128	**1.432**	.130
Autistic Spectrum Disorders	.978	.357	.815	.363
Physical/sensory disabilities that impact on daily life	**2.758**	.335	**2.740**	.336
Multiple or Unclassified SEN	.928	.389	.911	.390
SEN Wave 1 only	**2.196**	.110	**2.171**	.111
Dislike of school at Age 9			**2.239**	.121
Nagelkerke R^2	.028		.039	

Estimates in bold indicate a statistically significant difference (p < .01).

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[78] Note that the R^2 value for both of these regressions is low: only 3.9% of the variation in liking of school at age 13 is accounted for by SEN group and liking of school at age 9. This means that many characteristics that have not been included in this analysis are related to like or dislike of school.

Figure 5.2: **Results of logistic regression with dislike of school at age 13 for each SEN group compared to the no-SEN group, before and after accounting for dislike of school at age 9**
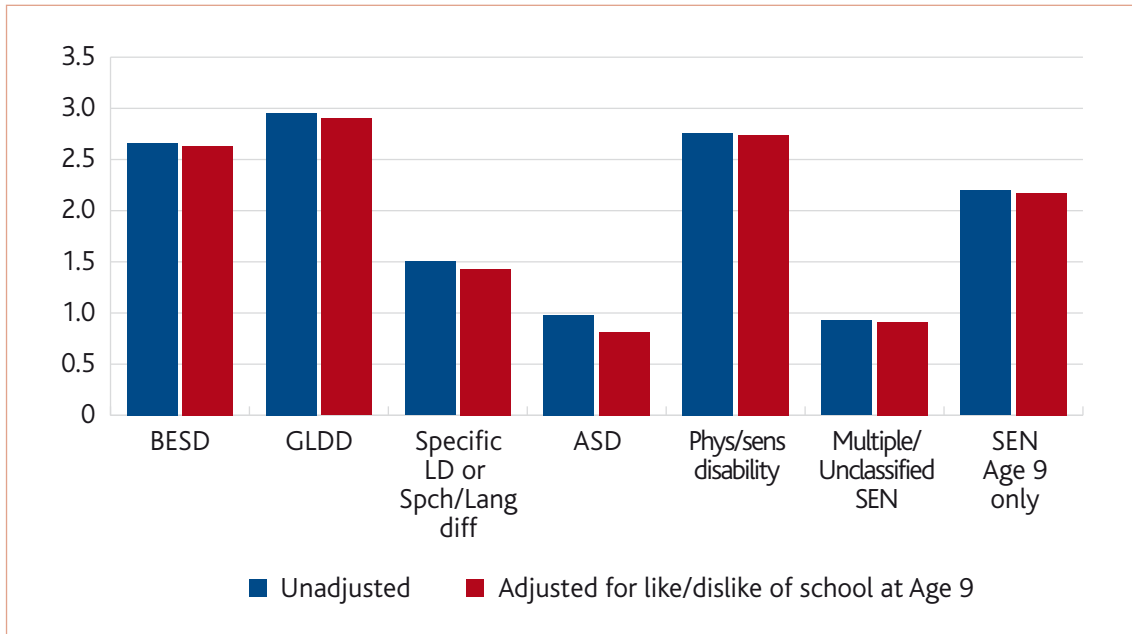
In summary, comparisons of liking of school between ages 9 and 13 show that:

1. In general, dislike of school increased between the ages of 9 and 13, but more so for children with special educational needs than without special educational needs. Children (whether with or without special educational needs) who disliked school at age 9 were more likely to express a dislike of school at age 13, which indicates that, for some children, dislike of school begins at an early age, and remains over time.

2. Liking of school decreased among 23% of children without special educational needs and 29% of children with special educational needs between the ages of 9 and 13. Conversely, liking of school increased among 24% of children without special educational needs, and 21% of children with special educational needs, between ages 9 and 13.

3. Even after accounting for whether or not they liked school at age 9, liking of school in all but two of the seven SEN groups was significantly lower than children without special educational needs at age 13. Liking of school in children with Autistic Spectrum Disorders and with multiple or unclassified SEN did not differ from children without special educational needs.

4. The analysis shows that many of the possible reasons for not liking school at age 13 are not accounted for, since the variation explained by liking school at age 9 and SEN group (about 4%) is low.

5.4   Progress and change in wellbeing

This section examines changes over time with respect to children's overall wellbeing (as measured by the Piers-Harris scale), number of close friends, and being bullied.

5.4.1   Wellbeing (Piers-Harris) scores

At both ages 9 and 13, parents responded to the Piers-Harris self-concept instrument with respect to their child, which yields a total wellbeing score, as well as six subscale scores (see Chapter 4). Therefore, results across waves are directly comparable for this measure. In contrast to the results reported in Chapter 4, we report wellbeing scores on their *original* scale, that is, they have not been standardised. Results are reported in this way so as to facilitate direct comparisons across waves.

There is a moderate positive correlation[79] between wellbeing scores at ages 9 and 13, implying that children who had higher wellbeing scores at age 9 had higher scores at age 13, and vice versa (the lower a child's wellbeing at age 9 the lower their wellbeing will be at age 13). The correlation between wellbeing scores among children with special educational needs is slightly weaker[80] than among children without special educational needs. This means that the wellbeing of children as reported by parents is more variable over time for children with special educational needs than children without special educational needs.

Table 5.5 compares changes in wellbeing scores between ages 9 and 13, overall and by SEN status. Looking first at the bottom of the table, it can be seen that children with special educational needs had significantly lower scores than children without special educational needs at both ages. Also, the mean score has increased slightly between ages 9 and 13, by about 1.1 scale points for children without special educational needs, 1.8 points for children with special educational needs, and 1.4 points for all children. The increase in scores among children with special educational needs is a positive finding.

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[79]   Correlation for all children, r = .305, df = 6854, p < .001.

[80]   Correlation for children with SEN, r = .207, df = 1738, p < .001, and the correlation for children without SEN, r = .311, df = 5116, p < .001.

Table 5.5: **Changes in wellbeing total scores between ages 9 and 13, by SEN status**

Change in Piers-Harris score age 9–age 13	No SEN	Any SEN	All children
Score decreased by 10 points or more	9.8	12.8	10.5
Score decreased by 5-10 points	11.1	11.0	11.1
Score stayed within 5 points	49.9	40.0	47.4
Score increased by 5-10 points	15.1	14.8	15.0
Score increased by 10 points or more	14.1	21.4	16.0
Mean Piers-Harris score (age 9)	47.46	**43.13**	46.34
Mean Piers-Harris score (age 13)	48.55	**44.91**	47.60
N	5116	1738	6854

671 children (8.9%) are missing Piers-Harris scores at age 9 and/or age 13. Figures marked in bold indicate that there is a statistically significant difference between children with no SEN and children with any SEN.

Looking at the top part of Table 5.5, it can be seen that there is greater stability in the scores of children without special educational needs, with about 50% of children having a score at age 13 that was within 5 points of the score at age 9, compared to 40% of children with special educational needs. About 10% of children without special educational needs had a large drop (10 points or more) in their score between ages 9 and 13, compared to 13% of children with special educational needs, indicating a lessening of wellbeing, On the other hand, more children with special educational needs (21.4%) than without special educational needs (14.1%) had a large increase (10 points or more) in their wellbeing, which is a positive finding, in that it is indicative of substantial gains in wellbeing over time.

Figure 5.3 shows the score difference between each SEN group at age 13 relative to the no-SEN group, before and after adjusting for their wellbeing at age 9. In all cases, the differences are statistically significant: that is, even after accounting for parent-reported scores of children when they were 9 years old, children in all seven SEN groups have significantly lower scores than children with no special educational needs at age 13. The data related to this figure are available in Table A4.11 in Appendix 4.

For example, looking at the third set of columns in Figure 5.3, children with specific learning difficulties or speech and language difficulties have a score that is about 2.6 points lower than children with no special educational needs at age 13. After accounting for their wellbeing at age 9, this difference drops to about 1.1 points.

Differences are particularly large for children with behavioural, emotional or social difficulties, Autistic Spectrum Disorders, physical or sensory disabilities, and general learning disabilities or difficulties. Also, across all children, a one-point increase in their wellbeing score at age 9 is associated with a 0.27-point increase in their wellbeing score at age 13, which is statistically significant. This confirms the positive association between wellbeing scores at ages 9 and 13.

Note, however, that only 4.2% of the variation in wellbeing scores is accounted for by SEN group, which implies, as might be expected, that many other factors are at play in children's wellbeing. Figure 5.3 illustrates the results shown in Table A4.11 (Appendix 4).

Figure 5.3: Results of linear regression with wellbeing scores at age 13 for each SEN group compared to the no-SEN group, before and after accounting for wellbeing scores at age 9
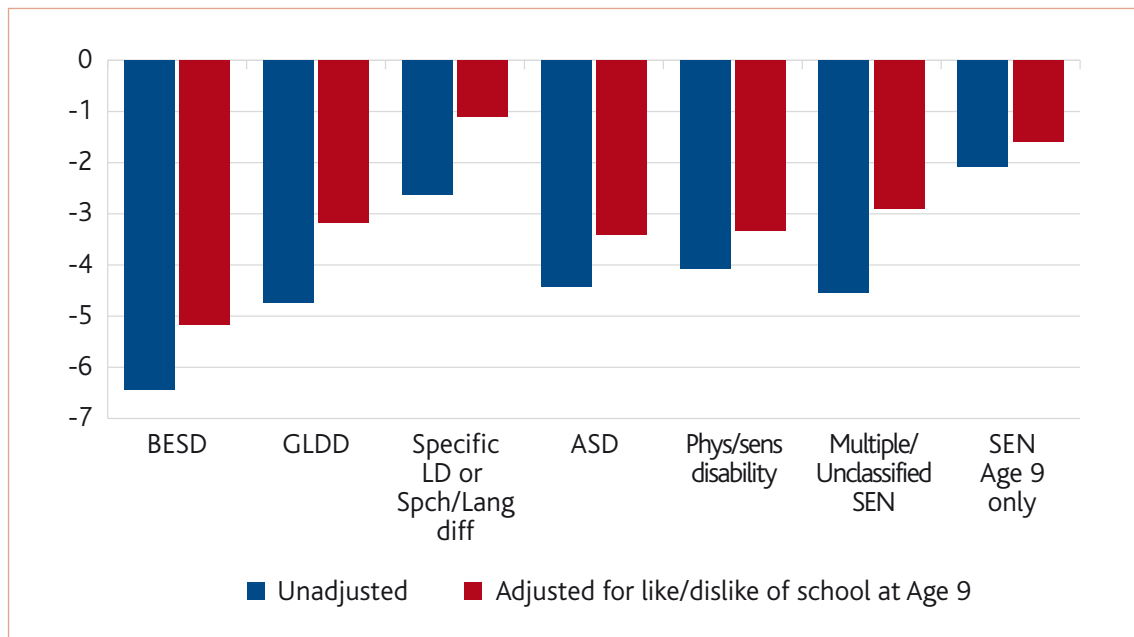
In summary, comparisons of children's wellbeing between ages 9 and 13, as measured by the wellbeing (Piers-Harris) total scale show that:

1. At ages 9 and 13, the mean wellbeing scores of children with special educational needs were significantly lower than children without special educational needs. However, across all children, there was a small increase in their mean scores. This increase was more marked among children with special educational needs, which is a positive finding.

2. At ages 9 and 13, wellbeing scores are moderately positively related to one another, indicating a moderate degree of stability in children's wellbeing between the ages of 9 and 13. There was slightly less stability in wellbeing between ages 9 and 13 among children with special educational needs compared to that of children without special educational needs.

3. Even after adjusting for children's wellbeing at age 9, children in all SEN groups had significantly lower wellbeing scores than children with no special educational needs at age 13. Adjusted scores were particularly low among children with behavioural, emotional or social difficulties, Autistic Spectrum Disorders, physical or sensory disabilities, and general learning disabilities or difficulties.

4. The models indicate that a majority of the variation in children's wellbeing is due to factors other than SEN group and wellbeing at age 9, since the explained variation is around 11%.

5.4.2   Being bullied

This section examines whether or not children who experienced bullying at age 9 were also more likely to experience bullying at age 13, and whether or not this relationship varies across SEN groups. We had hoped to examine both children's and parents' reports of children being bullied, but initial analysis showed that the wording of the questions asked of children differed too much across waves to allow for meaningful comparisons over time.[81] Therefore, we examined parents' reports only. In considering the results in this section, it should be borne in mind that what constitutes bullying in the opinion of one individual may not be perceived as bullying by another. Also, bullying behaviours cover a wide spectrum ranging in severity and kind.

The wording of the question asked of parents was the same when their children were aged 9 and 13, except for the timeframe referred to. When their children were aged 9, parents were asked, "To your knowledge, has <child> been a victim of bullying in the past year?", with response options Yes or No. When their children were aged 13, the timeframe was three months rather than a year.

Perhaps given differences in the timeframe referred to in this question across waves, more parents of 9-year-old children (24.1%) than 13-year-old children (10.4%) reported that their child had been bullied.

Table 5.6 shows the percentages of parents who reported their child being bullied at both waves, age 9 only, age 13 only, and not bullied at either wave. Across all parents, 5.0% reported their child being bullied at both ages 9 and 13, 5.0% at age 13 only, 19.1% at age 9 only, and 70.5% reported that their child was not bullied at either wave.

There are quite large differences among parents' reports of their child being bullied, depending on whether the child had special educational needs or not. For example, while just 2.7% of parents of children with no special educational needs reported that their child was bullied at both ages, this percentage is about four times higher among parents of children with special educational needs, at 11.3%. These quite large differences across SEN status are statistically significant.

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81 At age 9, children were asked, "Thinking back over the last year would you say that anyone (either a child or an adult) picked on you?", with response options Yes or No. Note that the term 'bullying' does not appear in the question. At age 13, children were asked, "Have you been bullied in the past 3 months?", with response options Yes or No. The age 13 question wording mentions bullying explicitly, unlike the age 9 question, and the timeframe is three months when children were aged 13 (compared to a year when they were aged 9).

Table 5.6: Percentages of children reporting being bullied at ages 9 and 13, by SEN status: parents' reports

Being bullied at Age 9 and/or Age 13	No SEN	Any SEN	All children
Not bullied at either age	76.1	55.2	70.5
Bullied Age 9 only	16.5	26.2	19.1
Bullied Age 13 only	4.7	7.3	5.4
Bullied at both Age 9 and 13	2.7	11.3	5.0
N	5500	2012	7512

13 children (0.2%) are missing information on being bullied at age 9 and/or age 13.

$\chi^2 = 398.361$, df = 3, $p < .001$

Figure 5.4 shows the odds of parents reporting that their child was being bullied for each of the seven SEN groups at age 13 relative to the no-SEN group, before and after adjusting for being bullied at age 9. Taking the first set of columns as an example, parents of children with behavioural, emotional or social difficulties were about 6.4 times more likely to report their child being bullied at age 13 compared to children with no SEN. After accounting for parents' reports of whether their child was bullied at age 9 or not, this drops somewhat, to an odds ratio of 4.8. In both cases, the odds ratios are quite large, emphasising the greater likelihood of being bullied for these children, regardless of whether they were bullied or not at age 9. The data related to Figure 5.4 is available in Table A4.12 in Appendix 4.

Interestingly, parents of children with a physical or sensory disability were no more or less likely to report their child being bullied at age 13 than parents of children with no SEN. For the other six groups, all were significantly more likely to report having been bullied at age 13. However, children with SEN at Age 9 only were no more likely to be bullied at age 13 than their no-SEN counterparts, once account was taken of parents' reports of their being bullied at age 9. The odds ratios are particularly high for children with BESD, GLDD, ASD and multiple or unclassified SEN.

The adjusted odds ratios for the SEN groups tend to decrease after account is taken of being bullied at age 9, suggesting that experiences of being bullied at ages 9 and 13 are somewhat related to one another, at least from parents' point of view. Note that children who, according to their parents, were bullied at age 9, were 2.8 times more likely to have been bullied at age 13, regardless of SEN status (Table A4.12 in Appendix 4). This could suggest a general risk among some children of being bullied.

The proportions of variance explained in both analyses (.075 for the first one and .115 for the second one) are moderate (see Table A4.12 in Appendix 4). This demonstrates that parents' reports of their child being bullied are occurring for reasons that are not measured in the models.

Figure 5.4: Results of logistic regressions of being bullied at Age 13 for each SEN group compared to the no-SEN group, before and after accounting for being bullied at Age 9: parents' reports
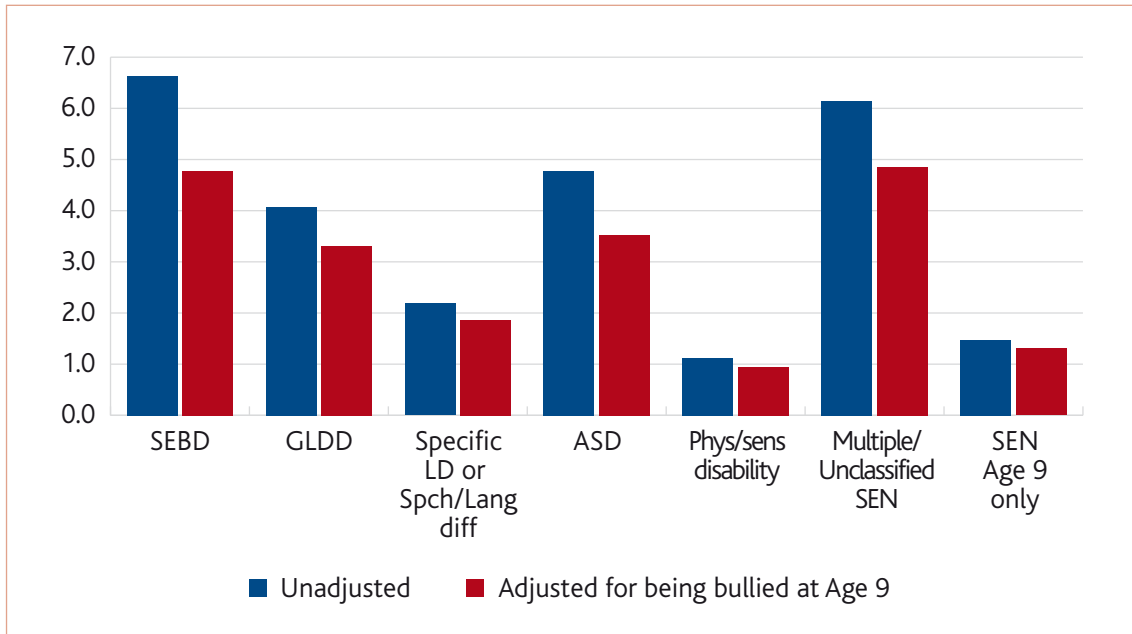
In summary, comparisons of parents' reports of their child being bullied between ages 9 and 13 show that:

1. The timeframe mentioned in the question on bullying asked of parents refers to the past year at age 9, and the past three months at age 13.

2. About four times as many parents of children with special educational needs (11.3%) than with no special educational needs (2.7%) reported that their child had been bullied at both ages 9 and 13, while fewer parents of children with special educational needs (55.2%) than without special educational needs (76.1%) reported that their child had not been bullied at either age.

3. Regardless of SEN status, parents who reported that their child had been bullied at age 9 were about 2.8 times more likely to report that they had been bullied at age 13.

4. Children in five of the seven SEN groups (with the exceptions of children with physical or sensory disabilities and with SEN at age 9 only) were significantly more likely to have parents report that they had been bullied at age 13. Children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, and Autistic Spectrum Disorders had quite high odds of being bullied at age 13, relative to children with no special educational needs.

5. The analyses have not examined the reasons for being bullied, or the impact, so should be interpreted quite broadly, and within the wider context of other wellbeing measures considered in this report.

5.4.3   Number of close friends

When their children were aged 9 and 13, parents were asked "How many close friends does <child> have?", with response options None, one, 2 or 3, 4 or 5, and 6 or more. The wording and response categories of the question were the same at both ages, so results can be compared with confidence. There is a moderate positive relationship between the number of close friends[82] reported by parents at ages 9 and 13, meaning that children with more close friends at age 9 also reported more close friends at age 13.

Table 5.7 shows that about half or more of all children had four or more close friends at both ages, while less than 2% had no close friends at both ages. Comparing children with and without special educational needs, there are slight differences. For example, less than 1% of children without special educational needs had no close friends at ages 9 and 13, compared to 4.6% of children with special educational needs at age 9, and 3.4% of children with special educational needs at age 13.

Table 5.7: Number of close friends at ages 9 and 13, by SEN status (parents' reports)

Number of close friends	No SEN		Any SEN		All children	
	Age 9	Age 13	Age 9	Age 13	Age 9	Age 13
None	0.8	0.6	4.6	3.4	1.8	1.3
One	5.6	3.1	9.0	6.6	6.5	4.0
2 or 3	40.3	31.8	43.8	35.3	41.2	32.7
4 or 5	35.1	36.3	28.7	29.1	33.4	34.3
6 or more	18.2	28.4	13.9	25.7	17.1	27.6
N	5506	5499	2011	2013	7514	7513

11–12 children (0.2%) are missing data on number of close friends at ages 9 and/or 13.

Figure 5.5 shows changes in the number of close friends across waves for children with and without special educational needs between 9 and 13. The bars are of similar heights across categories, meaning that changes in the number of close friendships over time are quite similar across children with and without special educational needs. On a positive note, slightly more children with special educational needs had parents reporting a large increase in the number of close friends (15.0%) than parents of children without special educational needs (11.6%). This is coupled with more parents of children without special educational needs than with special educational needs reporting no change in the number of close friends. These small variations across SEN status are statistically significant (χ^2 = 25.973, df = 4, p < .001).

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[82]   r = .276, df = 7502, p < .001. To compute the correlation between number of close friends at age 9 and 13, responses were recoded as follows: none = 0, 1 = 1, 2 or 3 = 2.5, 4 or 5 = 4.5, 6 or more = 8.

Figure 5.5: Changes in numbers of close friends at ages 9 and 13, by SEN group (parents' reports)
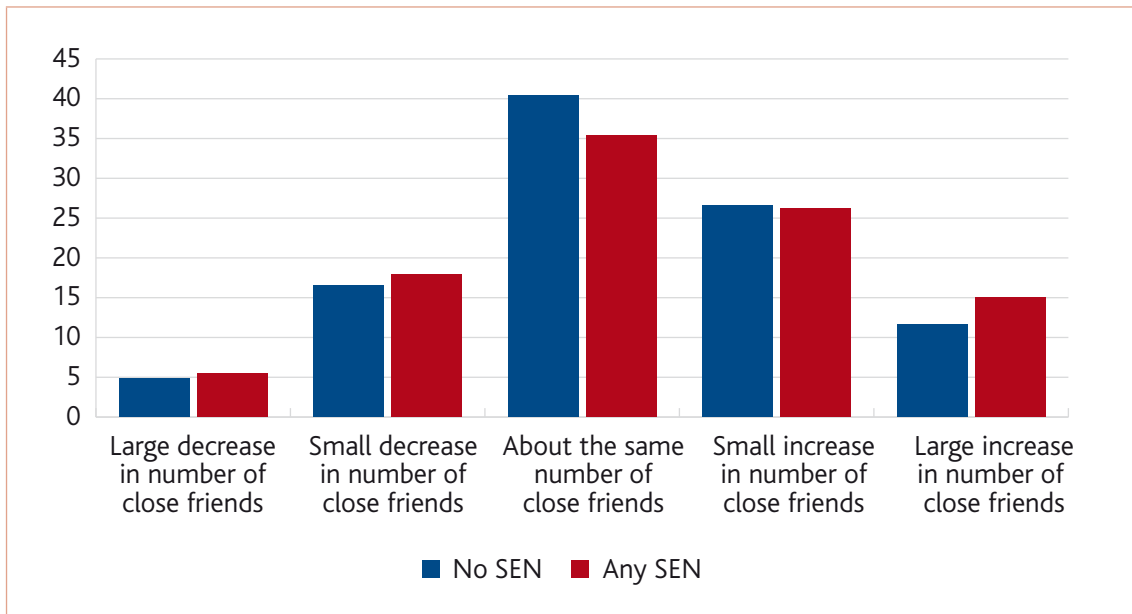
Figure 5.6 shows the results of a linear regression with number of close friends at age 13 as the outcome. Compared to children with no special educational needs, children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, multiple or unclassified SEN, and particularly Autistic Spectrum Disorder, had significantly fewer friends. The data related to Figure 5.6 is available in Table A4.10 in Appendix 4.

On the other hand, children with specific learning difficulties or speech and language difficulties, physical or sensory disabilities, and SEN at age 9 only, had about the same number of close friends as children without special educational needs. Across all children, an increase of one close friend at age 9 was associated with an increase of 0.28 close friends at age 13 (bottom row of Table A4.13 in Appendix 4). This analysis indicates that SEN group explains little of the overall variations in the number of close friends that children had at age 13 (as reported by parents).

Figure 5.6: Results of linear regressions with number of close friends at age 13 for each SEN group compared to the no-SEN group, before and after accounting for number of close friends at age 9
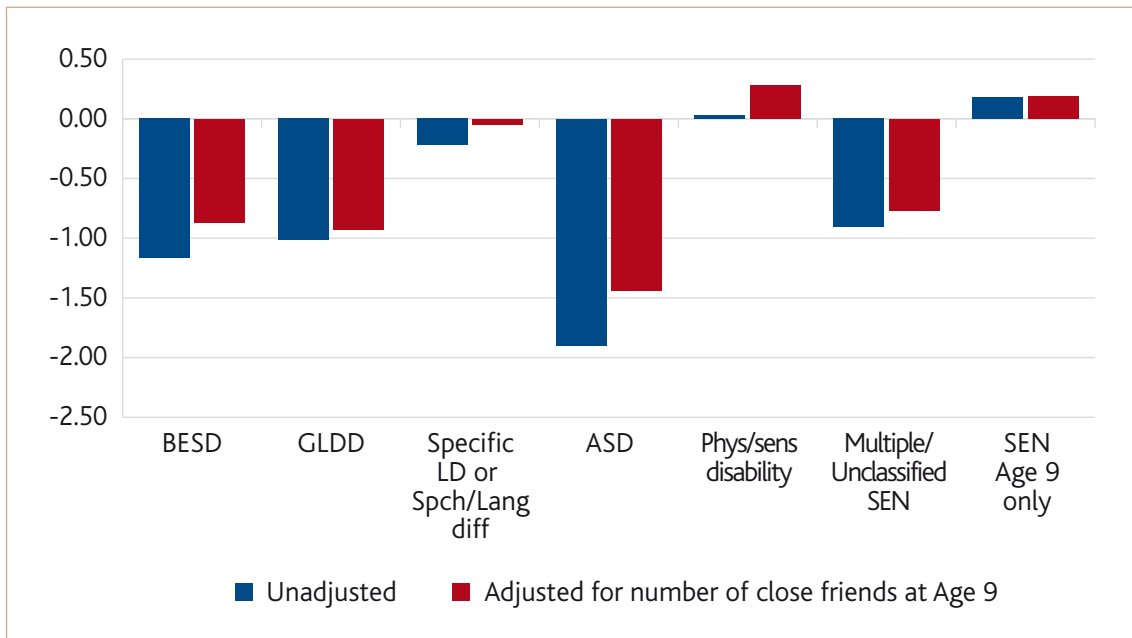
In summary, comparisons of parents' reports of the number of close friends that children had at ages 9 and 13 indicate that:

1. A small minority of parents (less than 2%) reported that their child had no close friends at either age. This was more prevalent among children with special educational needs (4.6% at age 9 and 3.4% at age 13) than children without special educational needs (less than 1% at either age).

2. A majority of children's parents reported that they had the same number of close friends or more at age 13 than at age 9. Parents of children with special educational needs reported a larger increase in the number of close friends between ages 9 and 13 than parents of children without special educational needs. This is a positive finding in that it indicates good social outcomes that coincided with the transition from primary to post-primary.

3. Having more close friends at age 9 was positively associated with having close friends at age 13 across all children.

4. Some children with special educational needs, i.e. with behavioural, emotional or social difficulties, general learning disabilities or difficulties, multiple or unclassified SEN, and particularly Autistic Spectrum Disorders, had significantly fewer close friends at age 13. On the other hand, children with specific learning difficulties or speech and language difficulties, physical or sensory disabilities, and SEN at age 9 only, had about the same number of close friends as children with no special educational needs.

5. Even though variation in the number of close friends across SEN groups is statistically significant, there is probably little substantive or practical importance associated with these differences.

6. While the analyses provide information on the quantity of close friends, they do not provide information on the quality of these friendships: measures of trust in peers and alienation from peers, described in Chapter 4, were asked about at age 13, but not at age 9.

5.5 Progress and change in achievement and expected attainment

This section examines changes over time with respect to children's verbal reasoning (VR) and numeric ability (NA) test scores, and parental educational expectations for their children.

Two important points should be borne in mind when interpreting the results of comparisons of achievement. First, the tests were not designed to assess the achievements of children with SEN. Rather, their purpose is to provide broad measures of verbal and numeric proficiency of the population of children at ages 9 and 13. Therefore, they are not necessarily the best measures of ability of children with special educational needs. Second, the tests were not designed to provide a measure of progress in achievement over time in that they are not linked to one another. Therefore, to compare across waves, we examine changes relative to the overall mean and standard deviation. In order to do this, we have standardised the test scores of children to have a mean of 100 and standard deviation of 15 at each wave for those children who have test scores at both waves.[83]

At age 13, children took verbal reasoning tests and numeric ability tests, while at age 9, children sat tests of reading and mathematics. In this report, when we refer to achievement at age 9 we use the terms reading and maths, and where we refer to achievement of children at age 13 we use the terms verbal reasoning and numeric ability. However, when we compare changes in achievement in this chapter (Chapter 5) and later in Chapter 6, we use the terms reading/verbal reasoning and maths/numeric ability interchangeably to simplify the language used in the chapters comparing children's achievement between ages 9 and 13.

Where reference is made to 'expected attainment' in relation to children's achievement scores in reading and mathematics, a connection is being made between test scores of children without special educational needs and children with special educational needs, and whether the difference between the two groups was statistically significant. Note, there are no standardised norms available for children with special educational needs.

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83 The methods used to form this and other similar scales are described in Chapter 2, Section 2.5.4.

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5.5.1   Progress and change in achievement in reading/verbal reasoning

In all, 6,913 children, or 91.9% of children who took part at age 13, had a reading/verbal reasoning score for both age 9 and 13. Children with special educational needs (15.6%) were more likely to have missing reading/verbal reasoning scores at one or both ages than children without special educational needs (5.4%). In addition, Table 5.2 (Section 5.2) suggests that had more children with special educational needs taken part at age 13, their mean test scores would be slightly lower. In other words, any differences in test scores between children with and without special educational needs in this section are likely to be underestimated slightly relative to what they might have been, had more children with special educational needs taken the tests at age 13.

Table 5.8 shows the percentages of children with score changes across waves by SEN status. As might be expected, the reading/verbal reasoning scores of children are relatively stable over time, with strong positive correlations[84] between scores at ages 9 and 13. Close to half of children (47.8%) achieved a verbal reasoning score at age 13 that is moderately different to their reading score at age 9; on the other hand, the scores of about 10% of children decreased to a large extent, and the scores of about 10% increased by a very large degree.

Table 5.8 shows that children with special educational needs were more likely to record a moderate increase in their scores (31.1%) compared to children without special educational needs (24.2%). These differences, though not large, are statistically significant. This indicates that children with special needs have made relatively more progress in the area of reading/verbal reasoning than children without special educational needs, which is a positive finding. On the other hand, it may well be the case that children scoring at the upper end of the achievement distribution on both occasions have not demonstrated a measurable increase in achievement due to ceiling effects.[85]

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[84]   r [overall] = .666, df = 6913, p < .001; r [no SEN] = .633, df = 5209, p < .001; r [SEN] = .641, df = 1703, p < .001.

[85]   A ceiling effect is when increases in achievement are not measured or observable above a certain level in the data, as the instrument used to assess students may not have been designed to differentiate students at the upper end of the achievement spectrum. This can also occur at the lower end of the achievement spectrum, and is called a floor effect.

Table 5.8: Changes in reading/verbal reasoning test scores at age 9 and 13, by SEN status (% of children)

Change in reading/verbal reasoning score relative to within-wave mean of 100 and SD of 15	No SEN	Any SEN	All children
Score decreased by more than 1 SD	10.2	8.8	9.8
Score decreased by half to 1 SD	16.9	14.9	16.4
Score stayed within half SD	48.6	45.2	47.8
Score increased by half to 1 SD	15.4	18.0	16.0
Score increased by more than 1 SD	8.8	13.1	9.9
N	5209	1703	6913

612 children (8.1%) are missing reading/verbal reasoning scores at age 9 and/or 13. Of these, 5.4% of children without SEN, and 15.6% of children with SEN, are missing reading/verbal reasoning scores at age 9 and/or 13.

χ^2=38.472, df = 4, p < .001

Table 5.9 shows the verbal reasoning score differences at age 13 between children in each of the seven SEN groups before and after taking their age 9 reading score into account. Before accounting for reading scores at age 9, the first column of Table 5.9 shows that the scores of five of the seven SEN groups (with the exceptions of Autistic Spectrum Disorders and physical or sensory disabilities) are significantly lower than the scores of children without special educational needs.

Looking at the second model in Figure 5.7, i.e. after adjusting for reading scores at age 9, the score differences between children without special educational needs and children in each of the seven SEN groups are a lot smaller. For example, the unadjusted score difference of children with general learning disabilities or difficulties is very large, at -17.0, while the adjusted difference is more moderate, at -4.7. The data related to Figure 5.7 is available in Table A4.14 in Appendix 4.

Interestingly, the score differences of two of the groups – children with specific learning difficulties or speech and language difficulties and with multiple or unclassified SEN – are no longer significant in the adjusted model. This means that children in these two groups were doing as well as might be expected on this particular measure of verbal reasoning, given their reading scores at age 9.

On the other hand, scores of children with behavioural, emotional or social difficulties, general learning disabilities and difficulties, and SEN at age 9 only are significantly lower than children without special educational needs in the adjusted model. This implies that these children were doing slightly less well on this particular measure of verbal reasoning than would be expected, given their reading scores at age 9. Note that the adjusted score difference for children with SEN at age 9 only (-1.5 points), though significant, is quite small, so not really of practical importance.

On the other hand, the adjusted score differences of children with behavioural, emotional or social difficulties, and general learning disabilities and difficulties are larger, and likely to be of some meaningful significance.

Finally, across all children, a one-point increase in reading scores at age 9 is associated with a 0.64-point increase in verbal reasoning scores at age 13 (bottom row of Table 5.9), which simply confirms the positive relationship between reading scores at ages 9 and 13.

Figure 5.7: Results of linear regressions of verbal reasoning test score at age 13 for each SEN group compared to the no-SEN group, before and after accounting for reading test score at age 9
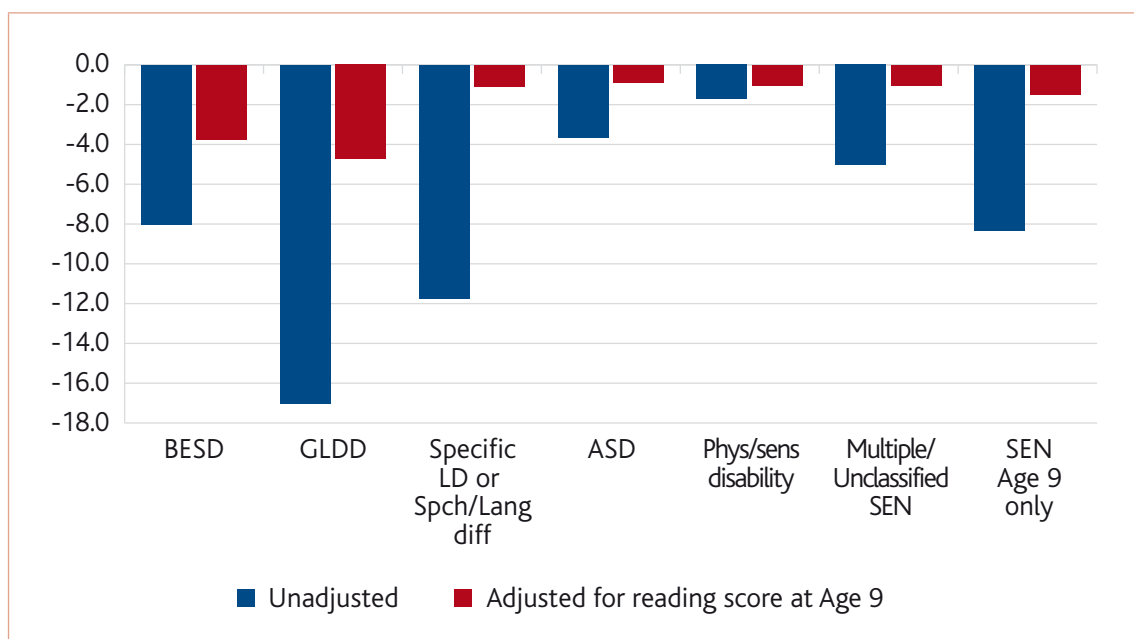
In summary, comparisons of reading scores between ages 9 and 13 show that:

1. The standardised tests of reading and verbal reasoning used in the GUI study were not designed to measure progress over time, nor were they designed to suit children with special educational needs. Moreover, reading/verbal reasoning scores are missing for close to 16% of children with special educational needs (compared to just over 5% of children without special educational needs). Nonetheless, some broad conclusions can be drawn.

2. Overall, children's reading/verbal reasoning scores are quite stable between ages 9 and 13. Consistent with this, the verbal reasoning scores of about half of all children remained broadly similar at age 13 compared to what their reading scores had been four years earlier, at age 9.

3. The reading/verbal reasoning scores of proportionately more children with special educational needs (31%) than without special educational needs (24%) showed relative moderate increases across waves, which is a positive finding since it indicates that relatively more progress was made by children with special educational needs than without special educational needs.

4. After adjusting for their reading scores at age 9, the verbal reasoning scores of children with specific learning difficulties or speech and language difficulties, Autistic Spectrum Disorders, physical or sensory disabilities, and multiple or unclassified SEN were at about the expected levels at age 13. However, verbal reasoning scores of children with behavioural, emotional or social difficulties, and general learning disabilities or difficulties, were moderately lower (by 4–5 points) than might have been expected at age 13, while verbal reasoning scores of children who had SEN at age 9 only were just marginally lower than might have been expected. Therefore, although good progress in the area of reading/verbal reasoning has been made among children with special educational needs in general, the amount of progress is not the same across specific SEN groups.

5.5.2 Progress and change in achievement in mathematics/ numeric ability

In all, 6,975 children, or 92.7% of children who took part at age 13 had a mathematics/numeric ability score for both waves. Children with special educational needs (14.6%) were more likely to have missing scores at one or both ages than children without special educational needs (4.6%), so the same caveats should be applied to the results in this section as the previous one.

Table 5.9 shows the percentages of children with score changes across waves by SEN status. The mathematics/numeric ability scores of children are relatively stable over time, though less closely related to one another than the two sets of reading/verbal ability scores: correlations are moderate to strong.[86] About two-fifths of children (41.1%) achieved a numeric ability score at age 13 that was broadly similar to their score at age 9; on the other hand, the scores of about 13% of children decreased to a large extent, and the scores of about 14% increased by a very large extent.

Table 5.9 shows that distribution of score changes for mathematics/numeric ability is generally quite similar for children with and without SEN, except that slightly more children with any SEN than without SEN recorded moderate increases (31.5% vs 28.3%), and slightly fewer children with any SEN than without SEN recorded moderate decreases (27.9% vs 30.4%). These small differences are statistically significant,[87] though not likely to be of practical importance. Comparing Table 5.9 with the results for reading (Table 5.8), the relative progress in reading/verbal reasoning among children with SEN is not really evident for mathematics/numeric ability.

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[86]   r [overall] = .562, df = 6975, p < .001; r [no SEN] = .523, df = 5250, p < .001; r [any SEN] = .527, df = 1725, p < .001.

[87] χ^2=13.916, df = 4, p = .008.

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Table 5.9: Changes in mathematics/numeric ability test scores between ages 9 and 13, by SEN status

Change in mathematics/numeric ability score relative to within-wave mean of 100 and SD of 15	No SEN	Any SEN	All children
Score decreased by more than 1 SD	14.1	12.8	13.7
Score decreased by half to 1 SD	16.3	15.1	16.0
Score stayed within half SD	41.3	40.6	41.1
Score increased by half to 1 SD	14.4	17.9	15.2
Score increased by more than 1 SD	13.9	13.6	13.8
N	5250	1725	6975

550 children (7.3%) are missing mathematics/numeric ability scores at ages 9 and/or 13. Of these, 4.6% of children without SEN, and 14.6% of children with SEN, are missing mathematics/numeric ability scores at ages 9 and/or 13.

Figure 5.8 shows the numeric ability score differences at age 13 between children in each of the seven SEN groups before and after taking their age 9 mathematics test score into account. Before accounting for mathematics scores at age 9, the first set of columns of Figure 5.8 shows that the scores of all seven groups, with the exception of children with physical or sensory disabilities, are significantly lower than the scores of children without special educational needs. The data related to Figure 5.8 is available in Table A4.15 in Appendix 4.

Looking at the second columns in Figure 5.8, i.e. after adjusting for mathematics scores at age 9, the score differences between children without special educational needs and children in each of the seven SEN groups are a lot smaller (as was the case in reading; Table A4.14 in Appendix 4). For example, the unadjusted score difference of children with specific learning difficulties or speech and language difficulties is quite large, at -11.0, while the adjusted difference is moderate, at -4.7.

The score differences of two of the groups – children with Autistic Spectrum Disorder and with multiple or unclassified SEN – are no longer significant in the adjusted model. This means that children in these two groups are doing as well as might be expected on this particular measure of numeric ability, given their scores at age 9.

On the other hand, scores of children with behavioural, emotional or social difficulties, general learning disabilities or difficulties, specific learning difficulties or speech and language difficulties, and SEN at age 9 only, are significantly lower than children without special educational needs in the adjusted model. This implies that these children are doing slightly less well on this particular measure of mathematics than would be expected, given their reading scores at age 9. The adjusted score differences for these four groups of children range from -3.7 points (behavioural, emotional or social difficulties) to -8.4 points (general learning disabilities or difficulties), and are all moderate to large in size.

Finally, across all children, a one-point increase in mathematics scores at age 9 is associated with a 0.52-point increase in numeric ability scores at age 13 (bottom row of Table A4.15 in Appendix 4), which simply confirms the positive relationship between maths/NA scores at ages 9 and 13.

Figure 5.8: Results of linear regressions of numeric ability test score at age 13 for each SEN group compared to the no-SEN group, before and after accounting for mathematics test score at age 9
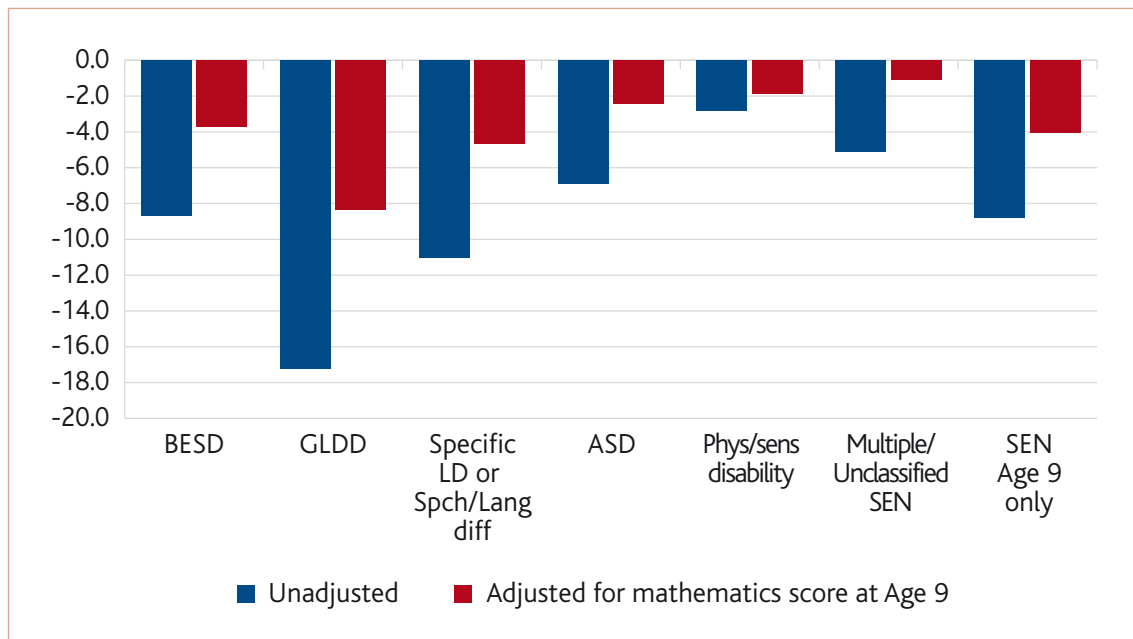
In summary, comparisons of mathematics/numeric ability scores between ages 9 and 13 show that:

1. As with the tests of reading/verbal reasoning, the standardised tests of mathematics/numeric ability used in the GUI study were not designed to measure progress over time, nor were they designed to suit children with special educational needs. Also, as with reading/verbal reasoning, mathematics/numeric ability scores were missing for close to 15% of children with special educational needs (compared to just under 5% of children without special educational needs). However, some broad conclusions are possible.

2. Overall, children's mathematics/numeric ability scores are quite stable between ages 9 and 13. Consistent with this, the numeric ability scores of about two-fifths of all children remained broadly similar at age 13 compared to what their mathematics scores had been at age 9.

3. In contrast to reading/verbal reasoning, where proportionately more children with special educational needs than without special educational needs showed relative moderate increases or more between ages 9 and 13, there was no difference in the percentages of children with and without special educational needs showing relative progress in mathematics/numeric ability over time.

4. After adjusting for their mathematics scores at age 9, the numeric ability scores of children with Autistic Spectrum Disorders, physical or sensory disabilities, and multiple or unclassified SEN were at about the expected levels at age 13. However, numeric ability scores of children with specific learning difficulties or speech and language difficulties and SEN at age 9 only were 4–5 points lower than might have been expected at age 13. Meanwhile, the mean numeric ability score of children with general learning disabilities or difficulties was 8.4 points lower than would have been expected. Therefore, although progress in mathematics/numeric ability has been made among some children with special educational needs, the level of progress is less than would be expected among children with specific learning difficulties or speech and language difficulties and SEN at age 9 only, and particularly among children with general learning disabilities or difficulties. Overall, less progress in mathematics/numeric ability than in reading/verbal reasoning has been made by children with special educational needs.

5.5.3   Progress and change in parental educational expectations

When their children were aged 9 and 13, parents were asked, "taking everything into account, how far do you expect <child> will go in his/her education or training?" with response options Junior Cert. or equivalent, Leaving Cert. or equivalent, An apprenticeship or trade, Diploma/Certificate, Degree, and Postgraduate/higher degree. The wording of the question is identical in both waves, so results can be compared with confidence.

Expected education level was converted to approximate years of education[88] as follows:

- Junior Cert: 11 years

- Leaving Cert: 13 years

- Apprenticeship or trade: 15 years

- Diploma/Certificate: 15 years

- Degree: 19 years

- Postgraduate/higher degree: 22 years.

Table 5.10 compares the percentages of parents selecting each of these responses at ages 9 and 13, by SEN status of the child. The table also shows the mean years of education on the basis of converting parents' responses to approximate years of education as shown above.

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[88]   These were based on descriptions of the Irish education system in the International Standard Classification of Education (ISCED; see http://www.mzes.uni-mannheim.de /publications/misc/isced_97/smyt08b_the_irish_educational_system_a_note_on_classificat.pdf). Junior Cert assumes 8 years of primary education plus three years of post-primary education, Leaving Cert assumes 8 years of primary education plus five years of post-primary education (the Transition Year is not included since fewer than half of all students take it); Apprenticeship or trade assumes Junior Cert plus a four-year apprentice programme; Diploma/Cert assumes Leaving Cert plus two years; Degree assumes Leaving Cert plus four years, and Higher degree assumes Degree plus three years.

Table 5.10: Parental educational expectations at ages 9 and 13, by SEN status

Expected level of education	No SEN		Any SEN		All children	
	Age 9	Age 13	Age 9	Age 13	Age 9	Age 13
Up to Leaving Cert	7.5	4.2	19.5	17.9	10.6	7.7
Apprenticeship or trade	4.8	2.6	10.7	9.9	6.3	4.5
Diploma or Cert	9.3	8.0	14.4	12.2	10.6	9.1
Degree	52.5	51.4	39.3	43.1	49.1	49.2
Higher Degree	25.9	33.9	16.1	16.9	23.4	29.5
Mean years of education	18.76	19.34	**17.27**	**17.52**	18.37	18.86
N	5413	5413	1911	1911	7324	7324

201 children (2.7%) are missing data on parental educational expectations at age 9 and/or 13. Figures in bold indicate a statistically significant difference in the expected years of education between children without SEN and children with any SEN (p < .01).

Looking at the last two columns of Table 5.10 (all children), it can be seen that parental educational expectations for their children have increased slightly between ages 9 and 13. This is most evident in the increase from about 23% to 30% of parents indicating that they expect their child to study for a higher degree and amounts to about half a year of additional education expected, on average (from 18.4 to 18.9 years).

Of children without special educational needs, parental educational expectations have increased by about 0.6 of a year on average, with an eight percentage point increase in the number of parents expecting their child to study for a higher degree (from 25.9% to 33.9%). Parents of children with special educational needs show only a small increase in their educational expectations for their child (amounting to about one-quarter of a year on average). When children were aged 9 and aged 13, parents' educational expectations of children without special educational needs were significantly higher than parents of children with special educational needs, and in fact the gap has widened slightly (from 1.5 years at age 9 to 1.8 years at age 13).

While Table 5.10 compares parental educational expectations for children with and without special educational needs in general, Table 5.11 compares the change in parental educational expectations over time for individual children. Children are grouped according to whether parental educational expectations, expressed as years of education, stayed the same, or decreased or increased by one or more years.

Table 5.11: **Changes in parental educational expectations from age 9 to age 13, by SEN status**

Change in parental educational expectations age 9-age 13	No SEN	Any SEN	All children
Decreased by more than three years	5.8	12.0	7.4
Decreased by one to three years	11.1	11.9	11.3
Stayed the same	52.6	46.8	51.1
Increased by one to three years	17.8	12.0	16.3
Increased by more than three years	12.7	17.2	13.9
N	5413	1911	7324

201 children (2.7%) are missing data on parental educational expectations at age 9 and/or 13.

The last column of Table 5.11 shows that parental educational expectations stayed the same in just over half of all children (51.1%), decreased for 18.7% of all children, and increased for 30.2%. Comparing children with and without special educational needs (the first two columns of the table), it can be seen that the educational expectations of parents remained the same for children without special educational needs (52.6%) slightly more frequently than for children with special educational needs (46.8%). Parental educational expectations decreased for 16.9% of children without special educational needs and 23.9% of children with special educational needs, while they increased for 30.5% of children without special educational needs and 29.2% of children with special educational needs.

The variations shown in Table 5.11 across children with and without special educational needs are statistically significant.[89] Essentially, Table 5.11 confirms the general pattern shown in Table 5.10, i.e. that the gap in parental educational expectations has widened slightly over time across individual children with and without special educational needs.

Figure 5.9 shows the results of two linear regressions that examine parental educational expectations (expressed as approximate years of education). The first regression model (the first column) includes the seven SEN groups, while the second one (second column) adds in parental educational expectations at age 9. The data related to Figure 5.9 is available in Table A4.16 in Appendix 4.

In both models, parental educational expectations are significantly lower in all seven SEN groups, except for children with physical or sensory disabilities, than children with no special educational needs. Across the six SEN groups that have significantly lower parental educational expectations, there is quite a large variation, from just -1.1 years (multiple or unclassified SEN) to almost -3.5 years (general learning disabilities or difficulties).

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[89] $\chi^2 = 132.015$, df = 4, p < .001.

When account is taken of parental educational expectations at age 9, the difference between children in these six SEN groups and the no-SEN group is still statistically significant, but smaller. For example, before accounting for parental educational expectations, parents of children with behavioural, emotional or social difficulties expect them to have 1.8 years less of education. After accounting for parental educational expectations, this reduces a little, to 1.3 years less of education.

The amount of variation in parental educational expectations explained by the seven SEN groups alone (9.6%) is small but certainly not trivial. The second model, which takes account of parental educational expectations at age 9, explains about a third of the variation in educational expectations at age 13. This confirms that parental educational expectations are reasonably stable over time.

Figure 5.9: Results of linear regressions of parental educational expectations at age 13 for each SEN group compared to the no-SEN group, before and after accounting for parental educational expectations at age 9
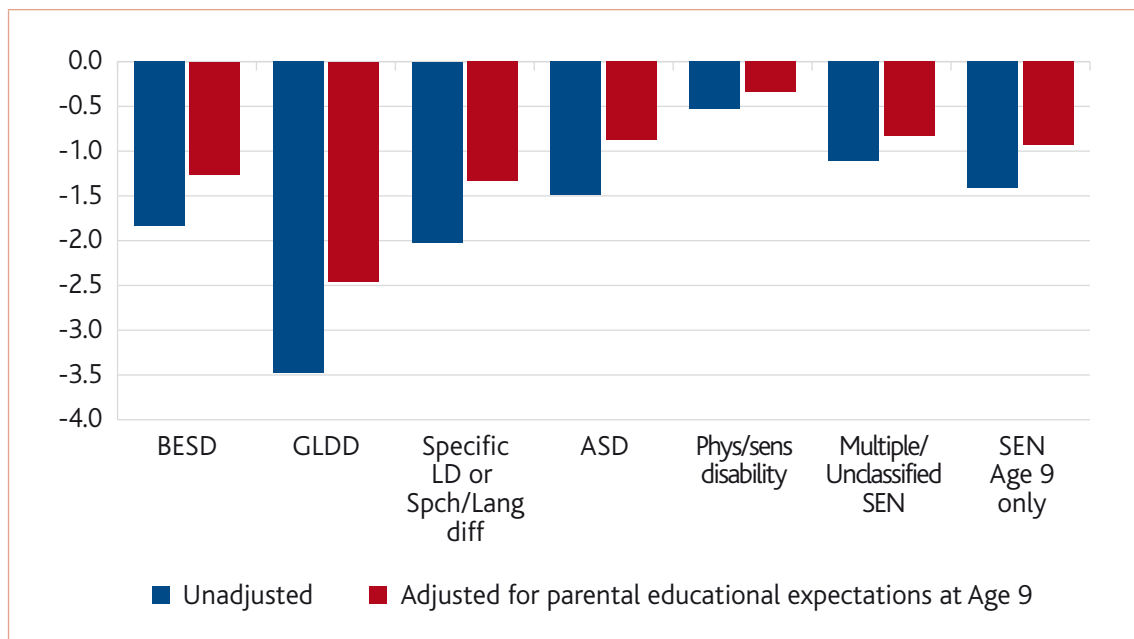
In summary, the analyses of parental educational expectations between ages 9 and 13 indicates that:

1. Overall, there has been an increase in parents' educational expectations for their children between ages 9 and 13, though this increase is slightly larger among parents of children without special educational needs than with special educational needs. This suggests a slight widening of the gap in parental educational expectations among children with and without special educational needs over time.

2. When their children were both aged 9 and 13, parents of children with special educational needs had significantly lower educational expectation for their child than parents of children without special educational needs.

3. Analyses that compared parental educational expectations for the seven SEN groups relative to the no-SEN group confirmed that educational expectations are lower in all of these groups, with the exception of parents of children with physical or sensory disabilities, whose parents had the same educational expectations for them as parents of children with no SEN.

5.6   Chapter summary

This chapter examined progress and change in eight outcomes under the three overarching themes of this report: engagement and attendance (days absent from school and liking of school), happiness and wellbeing (Piers-Harris scores, parents' reports of their child being bullied, and number of close friends), and achievement and expected attainment (reading/verbal reasoning and mathematics/numeric ability test scores, and parental educational expectations).

These eight outcomes were measured in a sufficiently similar way at ages 9 and 13 to allow comparisons over time to be made. However, due to attrition (loss of participants), 14% of children who took part at age 9 did not take part at age 13. This attrition means that the Wave 2/age 13 sample is a little more socio-economically advantaged, with higher test scores and wellbeing scores, than would have been the case had all children who took part at age 9 participated at age 13. This said, an attrition rate of 14% is low for longitudinal surveys of this kind.

The main findings under each of the eight outcomes are summarised below.

Attendance rates at age 9 are positively related to attendance rates at age 13. This relationship is slightly stronger among children with special educational needs than without special educational needs. Children with special educational needs missed significantly more days of school than children without special educational needs at both waves. Children with special educational needs showed a greater disimprovement in attendance rates than children without special educational needs, between ages 9 and 13.

Even after accounting for number of days absent from school at age 9, the absence rates of each of the seven SEN groups remained significantly higher than the absence rate of children without special educational needs and were particularly high for children with behavioural, emotional or social difficulties, and general learning disabilities or difficulties.

In general, *dislike of school* increased between the ages of 9 and 13, but more so for children with special educational needs than without special educational needs. Children (whether with special educational needs or not) who disliked school at age 9 were more likely to express a dislike of school at age 13. This suggests that like or dislike of school is established early and is long-term in nature among some children.

After accounting for whether or not children liked school at age 9, liking of school in all but two of the seven SEN groups was significantly lower than children without special educational needs at age 13. The analysis, however, shows that many of the possible reasons for liking or not liking school at age 13 were not accounted for, since the variation in liking of school explained by SEN group and liking of school at age 9 (about 4%) is low.

At both age 9 and age 13, the mean *wellbeing scores* of children with special educational needs were significantly lower than children without special educational needs. However, across all children, there was a small increase in scores. This increase was more marked among children with special educational needs, which is a positive finding.

Children in all seven SEN groups had significantly lower wellbeing scores than children with no special educational needs at age 13, even after adjusting for their scores at age 9. Adjusted wellbeing scores were particularly low among children with behavioural, emotional or social difficulties, Autistic Spectrum Disorders, physical or sensory disabilities, and general learning disabilities or difficulties. SEN group and wellbeing scores at age 9 explained 11% or so of the variation in wellbeing at age 13. This indicates that a majority of the variation in children's wellbeing is due to factors that were not included in the analysis.

About four times as many parents of children with special educational needs (11%) than without special educational needs (3%) reported that their child had been bullied at *both* ages 9 and 13, while fewer parents of children with special educational needs (55%) than without special educational needs (76%) reported that their child had not been bullied at either wave. Regardless of SEN status, though, parents who reported that their child had been bullied at age 9 were 2.8 times more likely to report that they had been bullied at age 13.

Children in five of the seven SEN groups (with the exceptions of children with physical or sensory disabilities and with SEN at age 9 only) were significantly more likely to have parents report that they had been bullied at age 13. Children with behavioural, emotional or social difficulties, general learning disabilities and difficulties, and Autistic Spectrum Disorders had quite high odds of being bullied at age 13, relative to children without special educational needs.

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A majority of children's parents reported that they had the same *number of close friends* or more at age 13 compared to when they were 9 years old. Parents of children with special educational needs reported a larger increase in the number of close friends across waves than parents of children without special educational needs, which is a positive finding. Also, having more close friends at age 9 was positively associated with having close friends at age 13 across all children. Note that, while the analyses provide information on the quantity of close friends, they do not provide information on the quality of these friendships. Analyses in Chapter 4 of children's responses to measures of trust in peers and alienation from peers indicates that, at age 13 at least, children without SEN enjoyed higher quality friendships than children with SEN.

The *standardised tests of reading/verbal reasoning and mathematics/numeric ability* used in the GUI study were not designed to measure progress over time, nor were they designed to suit children with special educational needs. Also, test scores were missing for 15–16% of children with special educational needs (compared to about 5% of children without special educational needs). Nonetheless, some broad conclusions regarding children's progress in achievement are possible.

Overall, children's reading/verbal reasoning and mathematics/numeric ability scores are quite stable between ages 9 and 13. The reading/verbal reasoning scores of proportionately more children with special educational needs (31%) than without special educational needs (24%) showed relative moderate increases between age 9 and 13, which is a positive finding since it indicates that relatively more progress was made by children with special educational needs than children without special educational needs. In contrast to reading/verbal reasoning, there was no substantive difference in the percentages of children with and without special educational needs showing relative progress in mathematics/numeric ability over time.

After adjusting for their reading scores at age 9, the verbal reasoning scores of children with specific learning difficulties or speech and language difficulties, Autistic Spectrum Disorders, physical or sensory disabilities, and multiple or unclassified SEN, were at about the expected levels at age 13. However, verbal reasoning scores of children with behavioural, emotional or social difficulties and general learning disabilities or difficulties were moderately lower than might have been expected at age 13, while verbal reasoning scores of children who had SEN at age 9 only were just marginally lower than might have been expected. Therefore, although good progress has been made in reading/verbal reasoning among children with special educational needs in general, the amount of progress is not the same across the seven SEN groups.

After adjusting for their mathematics scores at age 9, the numeric ability scores of children with Autistic Spectrum Disorder, physical or sensory disabilities, and multiple or unclassified SEN were at about the expected levels at age 13 (their scores at age 13 were in line with children without SEN's scores). However, numeric ability scores of children with specific learning difficulties or speech and language difficulties and SEN at age 9 only were moderately lower (by 4–5 points) than might have been expected at age 13. Meanwhile, the numeric ability scores of children with general learning disabilities or difficulties were 8.4 points lower than would have been expected given their scores at age 9, which is a moderate to large difference. Therefore, although progress in mathematics/numeric ability has been made among some children with special

educational needs, the level of progress is less than would be expected among children in a few of these groups (their scores were not in line with children without SEN's scores). The fact that more progress was made in reading than mathematics among children with special educational needs suggests that curricular issues, children's engagement with the subject area, or other mathematics-specific factors, such as teacher qualifications in mathematics, may be at play.

When their children were aged 9 and 13, parents of children with special educational needs had significantly lower *educational expectation for their child* than parents of children without special educational needs. Parental educational expectations are significantly lower in all seven SEN groups relative to the no-SEN group, with the exception of parents of children with physical or sensory disabilities. Overall, there has been an increase in parents' educational expectations for their children between ages 9 and 13. However, this increase is slightly larger among parents of children without special educational needs than with special educational needs. This indicates a slight widening of the gap in parental educational expectations among children with and without special educational needs over time.

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6.   Change and progress over time: What matters?

6.1   Chapter overview

In Chapter 5, we examined progress and change in the children who took part in both waves of the GUI study, under the three themes of *engagement and attendance*, *happiness and wellbeing*, and *achievement and expected attainment*. This chapter develops the findings of Chapter 5 by examining whether or not student and school characteristics are important in explaining progress and change over time for children with SEN in post-primary schools.

The analyses use *multilevel modelling*. Multilevel models take account of the fact that children are grouped in schools and tend to share social and educational characteristics (recall, though, that the sample of 13 year olds in GUI was not designed to be representative of post-primary schools). They allow us to examine the simultaneous contributions of school and student characteristics in explaining outcomes of interest, and are designed to bring together some of the key findings in Chapters 3, 4 and 5. The analyses do *not* include children in primary or special schools, due both to the small numbers in these educational settings (142 children or 1.8% of all 7525 13-year-old participants) and the fact that the school-level characteristics of these settings are quite different to post-primary schools.

The software used for analyses, HLM 6.0, does not work with missing data. Therefore, children with any missing data on any of the measures examined were deleted before running the analyses. In all, the multilevel model dataset includes 6817 (or 90.6%) of the 7525 children in 618 post-primary schools (with an average of 11.03 children per school). For this reason, and also since the analyses take the clustering of children into schools into account, results are not directly comparable with those shown in Chapters 4 and 5 (they should, however, be broadly consistent).

Since the numbers of children in some of the seven SEN groups are very small, as already seen in Chapters 3, 4 and 5, we have used a grouping for the analyses presented in Chapter 6 as follows:

- Children with no special educational needs at either age 9 or age 13 (78.9% of children in the multilevel dataset)

- Children with special educational needs at age 9 only (7.2%)

- Children with special educational needs at age 13 only (6.1%)

- Children with special educational needs at both age 9 and 13 (7.7%).

The outcomes selected for more detailed examination in this chapter under the three themes are:

- Engagement and attendance: number of *days absent* from school at age 13

- Happiness and wellbeing: *Piers-Harris total scores* and *being bullied* at age 13

- Achievement and expected attainment: *verbal reasoning and numeric ability test scores* at age 13.

For each outcome, we compare the results for children with and without SEN, before and after accounting for the outcome at age 9, along with additional school and student characteristics. Results of the analyses of verbal reasoning and numeric ability test scores need to be interpreted with respect to the fact that these broad measures of achievement were not designed specifically for children with special educational needs.

Before presenting the results of the multilevel models, a descriptive profile is provided of each of the four groups.

6.2   Description of children with and without Special Educational Needs

The purpose of this section is to give an idea of the demographic and social compositions of each of the groups that will be analysed and compared in the sections that follow (Chapter 2, Section 2.3, describes the composition of these groups who took part in GUI at age 13.). Appendix 4 includes further information on the demographic and socioeconomic characteristics of children in the four SEN groups compared in this chapter.

Boys are somewhat over-represented in the 'SEN age 9' and 'SEN age 9 and 13' groups, with almost equal percentages of boys and girls in the 'SEN age 13' group. Children with special educational needs at both age 9 and 13 were more likely to be in First Year than children in any of the other groups; however, the differences across the SEN groups in how they are distributed across year levels are not statistically significant.[90] Children with special educational needs (whether at age 9, age 13, or at both age 9 and 13) were more likely to live in one-parent households, and with more changes in household composition, than children without special educational needs at age 9 or 13. Parental education is significantly lower among children in the three SEN groups relative to children with no special educational needs at age 9 or 13. Social welfare dependence is also significantly higher among children in the three SEN groups compared to children with no special educational needs at age 9 or 13.

Across all children included in the multilevel analyses, 82.9% had not attended a DEIS primary school, while 7.6% attended Urban Band 1 schools (these are generally the most socioeconomically disadvantaged primary schools), 5.6% attended Urban Band 2 schools, and the remainder, 3.9%, attended Rural DEIS schools. The main difference across the four groups in Table 6.1 in terms of primary school attended is in the percentages of children attending DEIS Band 1 primary schools, which is almost three times higher among children with special educational needs at age 13 only (17.3%) compared to the percentage of children without special educational needs at either age 9 or age 13 (6.5%).

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90    $\chi^2 = 6.683$, df = 3, p = .083.

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Looking at the distribution of children across post-primary school types (sector), some of the differences associated with single-sex and co-ed secondary schools are as a result of differences in the gender distribution of children in each of the groups. For example, about half of the children in the 'SEN age 13' group are female, and this is reflected in a higher percentage of children in this group attending all girls' secondary schools relative to children with special educational needs at age 9 only and with special educational needs at ages 9 and 13. It is also worth noting that children with special educational needs at age 9 only, and at ages 9 and 13, are over-represented in ETB schools compared to children with no special educational needs at either age.

Finally, proportionately more children with special educational needs were enrolled in DEIS post-primary schools. For example, about 19–20% of children with special educational needs at age 13 only, and with special educational needs at both ages 9 and 13, were enrolled in DEIS schools, compared to just 12% of children without special educational needs at either age.

With the exception of year level, children in the four groups differ significantly in how they are distributed across categorical measures (i.e. gender, household composition, primary school DEIS status, post-primary school DEIS status, and school sector).

Figure 6.1 shows the distribution of special educational needs across all children identified as having special educational needs at either or both ages 9 and 13, for those children included in the multilevel dataset. The figure shows that the composition of the groups is quite different, depending on when special educational needs were identified and whether special educational needs span the two ages or not. The composition of groups as shown in Figure 6.1 is very similar to that shown in Table 2.5 in Chapter 2, which shows the composition of *all* children who took part age 13. This is good, since it confirms that the deletion of records with missing data for the analyses shown in this Chapter has not resulted in a change in the overall composition of the groups.

Figure 6.1: Special educational needs classifications of children with SEN at age 9 only, SEN at age 13 only, and SEN at ages 9 and 13 (children included in the multilevel model dataset)
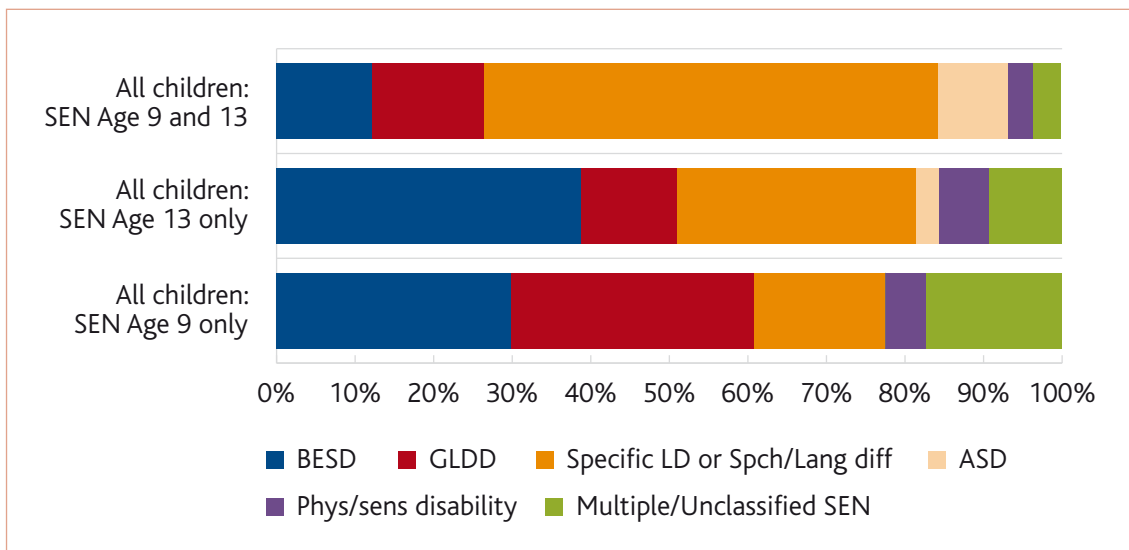
Figure 6.2 compares the composition of these groups by gender (again, these are similar to Chapter 2, Table 2.5). The differences in the compositions of these three SEN groups should be borne in mind when interpreting the results of the multilevel models.

Figure 6.2: **Special educational needs classifications of children with SEN at Wave 1 only, SEN at Wave 2 only, and SEN Waves 1 and 2, by gender (children included in the multilevel model dataset)**
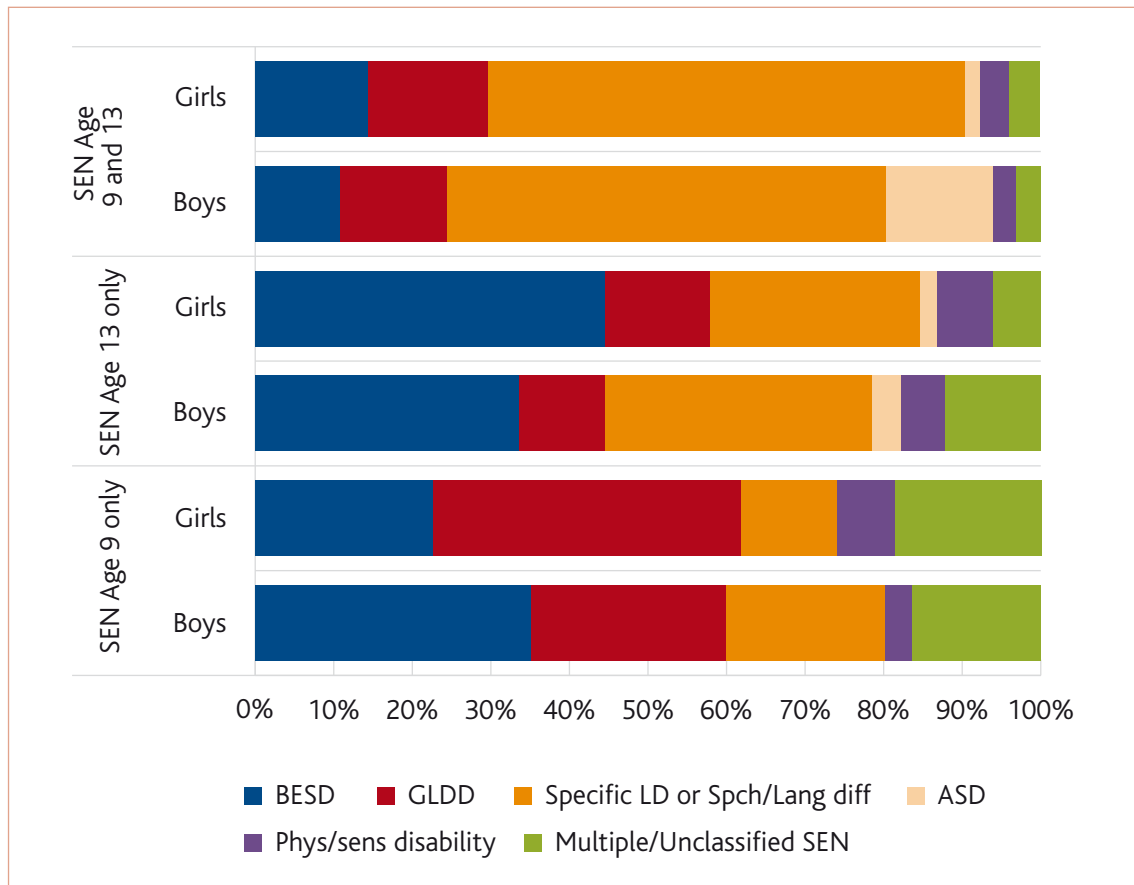
Table 6.1 compares the four groups that are under examination in this chapter on the five outcomes analysed (days absent from school, wellbeing scores, being bullied, and verbal reasoning and numeric ability test scores). This is done to give the reader an idea of where children in each group stand on each outcome before presenting the results of the multilevel analyses which take additional characteristics into account. Even though these characteristics have already been examined in Chapters 4 and 5, recall that in this chapter we are looking at a different grouping of special educational needs, as well as a sub-set of children (i.e. only those with valid data on the measures being examined).

As indicated by the analyses in Chapters 4 and 5, children with special educational needs at age 9 only, age 13 only, or at both ages, all have significantly lower wellbeing scores, verbal reasoning and numeric ability test scores, and significantly higher days absent, as well as higher incidences of being bullied, than children with no special educational needs in either wave. The remainder of this chapter will add to the results already presented by examining whether school and child characteristics explain variation in these outcomes, over and above how children were doing at age 9, and their SEN status.

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Table 6.1: **Days absent from school, wellbeing scores, being bullied, and verbal reasoning and numeric ability test scores of children with no SEN at either age, SEN at age 9 only, SEN at age 13 only, and SEN at both age 9 and 13**

Characteristic	No SEN at either age	SEN age 9 only	SEN age 13 only	SEN ages 9 and 13	All children
N	5144	584	443	646	6817
Days absent from school					
Mean	4.39	**5.10**	**5.82**	**5.53**	4.62
SD	4.60	5.21	6.02	5.58	4.85
Wellbeing scores					
Mean	51.30	**48.80**	**46.64**	**46.81**	50.00
SD	9.26	10.46	11.49	10.35	10.00
Being bullied (parents' reports)					
No	92.6	90.6	75.6	80.9	90.5
Yes	7.4	9.4	24.4	19.1	9.5
Total	100.0	100.0	100.0	100.0	100.0
Verbal reasoning test score					
Mean	103.85	**95.87**	**97.46**	**92.30**	100.00
SD	14.30	15.38	15.14	14.41	15.00
Numeric ability test score					
Mean	103.96	**94.73**	**96.77**	**92.25**	100.00
SD	14.60	13.51	14.18	13.01	15.00

Differences marked in bold indicate that the mean for that group is statistically significantly different from the no-SEN group (p < .01). Variations in the distribution of children bullied/not bullied are statistically significant (p < .001).

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Box 6.1 provides some information on how to interpret the results of the multilevel models.

Box 6.1: Interpreting the multilevel model results

How big is a difference?

It is important to bear in mind that, for large samples such as the children who took part in GUI, it is frequently possible to obtain a statistically significant result, even when the results suggest the differences between groups are not that large in real or substantive terms. In other words, we could find a statistically significant result which has little or no practical importance.

Therefore, interpreting the results of the multilevel models depends on whether the outcome is measured on a continuous scale (such as verbal reasoning test scores), or a categorical scale (such as bullied–not bullied). Below are guidelines for interpreting the results of the multilevel models in terms of how big or small the differences between SEN groups can be considered, in practical terms.[88]

Days missed from school: The mean is 4.6 and the standard deviation is 4.9. Differences of 0–0.5 days are 'negligible to small', 1–1.5 days 'small to medium', 2–3.5 days 'medium to large', 4–5 days 'large' and 5.5 or more days indicate a 'very large' difference between groups in days absent.

Wellbeing scores (Piers-Harris): The mean is 50 and the standard deviation is 10. Differences of 0–1 points are 'negligible to small', 2–3 points 'small to medium', 4–7 points 'medium to large', 8–10 points 'large' and 11 or more points indicate a 'very large' difference between groups on the Piers-Harris scale.

Reading/verbal reasoning and mathematics/numeric ability test scores: For both tests, the mean is 100 and the standard deviation is 15. Differences of 0–2 points are 'negligible to small', 3–5 points 'small to medium', 6–10 points 'medium to large', 11–15 points 'large' and 16 or more points indicate a 'very large' difference on the tests of verbal reasoning and numeric ability.

Parents' reports of the child being bullied: The multilevel models show the odds ratios of each SEN group having been bullied compared to the no-SEN group. For example, an odds ratio of 2.0 means that that group is twice as likely (has double the odds) of being bullied compared to the no-SEN group. We suggest that odds ratios around 0.2 (one-fifth as likely) and 4.3 (just over four times more likely) indicate a 'large' difference, that odds ratios around 0.4 and 2.5 indicate a 'medium' difference, and that odds ratios around 0.7 and 1.4 indicate a 'small' difference.[89]

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[91] This interpretation is similar to that based on Cohen's d to describe effect sizes, which equals the difference between means divided by the pooled standard deviation, where an effect size of 0.2 is described as small, 0.5 as medium, and 0.8 as large (Cohen, 1988).

[92] These guidelines are from Chinn (2000) and are relatively widely cited; however, the context in which they are applied is medical rather than educational, and so the criteria may be more conservative in a medical context relative to an educational one.

6.3   Multilevel models of days absent from school

Table 6.2 shows the results for three models with days absent from school over the past 12 months at Wave 2 as the outcome. On average, children had missed 4.6 days of school over the past 12 months (standard deviation = 4.9). Only 7.7% of the total variation in absence rates is between schools, therefore 92.3% is accounted for as between student factors. This means that reasons for absences are occurring largely because of differences between individual students rather than between schools. These models look at what other variables could impact on days absent from school.

Model 1 examines differences between the SEN groups on their own, while Model 2 accounts for absence rates at Wave 1. Model 3 includes additional school and student characteristics that explain some of the variation in absence rates.

Model 1 (differences between SEN groups) simply confirms (as was shown in Chapter 4, Table 4.8, and Figure 4.1) that students in each of the three SEN groups missed more school than students with no special educational needs at age 13. Although statistically significant, this model explains only 1.6% in the variation in attendance rates.

Model 2 (accounting for absence rates at age 9) shows that once account is taken of attendance patterns when children were aged 9, the difference in days missed between the three SEN groups and children with no special educational needs at either wave is smaller, though still statistically significant (consistent with Chapter 5, Table 5.2 and Figure 5.1). Model 2 also shows that, on average, for every day missed at age 9, children are expected to miss about 0.3 days of school at age 13. This model explains about 11.6% of the variation in children's attendance rates at age 13.

Model 3 (additional school and student characteristics) is of interest since the differences in days missed between children without special educational needs and children with special educational needs at age 9 only, and with special educational needs at ages 9 and 13, is no longer statistically significant, and the difference in days missed between children with no special educational needs and children with special educational needs at age 13 only drops from about 1.7 days to 1.1 days. In other words, the differences in attendance rates across the SEN groups and the no-SEN group observed in Model 2 are largely accounted for by the variables included in Model 3.[93]

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[93]   Children's gender, school sector, post-primary school DEIS status and primary school DEIS status were not significant in the multi-level analysis of attendance.

These variables are:

- Parents' reports of the child's adjustment to the transition to post-primary school (see Chapter 4, Tables 4.1 and 4.2)

- Student's year level

- Parental education

- Percentage of household income from social welfare.

Further analysis of what is occurring in Model 3 (not shown here) confirmed that the differences in attendance rates are largely due to the extent to which children have adjusted to post-primary school. In other words, children whose parents reported that they settled well into post-primary school had lower absence rates. The interaction between adjustment and SEN group (not shown here) is not statistically significant. This means that settling well into post-primary school is associated in the same way with attendance across SEN groups.

Model 3 indicates that attendance rates drop by about 0.44 days between First and Second Year across all children, consistent with previous research that shows disengagement among some children in Second Year (Smyth *et al.*, 2006). The model also shows that children's socio-economic backgrounds (as indicated by parental education and percentage of household income from social welfare) have some bearing on children's attendance rates. The fact that these, along with children's attendance patterns at age 9, are in the final model, suggest the importance of promoting, supporting and maintaining good attendance patterns in children from an early age.

It is worth noting that none of the school-level measures are statistically significant. In other words, children's absences from school do not vary across school sector or DEIS status once account is taken of some of their individual characteristics. In total, Model 3 explains 14.9% of the variation in attendance rates at age 13. In other words, the measures added in Model 3 account for an additional 3.3% of the variation in children's attendance rates in addition to those in Model 1 and Model 2.

It should be noted that the multilevel analysis of children's attendance rates has not considered reasons for absences. Some may be due to underlying medical conditions or poor health.

Table 6.2: Multilevel models of children's attendance rates (days of school missed in the 12 months preceding Wave 2)

Characteristic	Model 1	Model 2	Model 3
Student level			
SEN group [RefGroup = no SEN either wave]			
SEN age 9 only	**0.907**	0.708	0.448
SEN age 13 only	**1.910**	**1.684**	**1.109**
SEN age 9 and 13	**1.399**	**1.151**	0.547
Days absent at age 9		**0.309**	**0.285**
Year level (first year–second year)			**0.443**
Adjustment to post-primary school (M=50, SD=10)			**-0.049**
Parental education [RefGroup = third level non-degree]			
Lower second level			**0.947**
Upper second level			-0.104
Primary degree			-0.329
Post-graduate degree			-0.303
Percent of household income from social welfare			**0.016**
% of variance explained	1.6	11.6	14.9

Values in bold are statistically significant (p < .01). Values in grey are statistically significant (p < .05).

6.4 Multilevel models of wellbeing (Piers-Harris) total scores

Table 6.3 shows the results for three models with wellbeing scores at age 13 as the outcome. Similar to children's absences from school (Section 6.3), only a small amount of the total variation in student wellbeing – 7.0% – is between schools. This implies that 93% of the reasons for low and high scores on the wellbeing scale are largely due to differences between individual students rather than between schools.

Model 1 examined differences between the SEN groups on their own, while Model 2 accounted for wellbeing scores at age 9 in addition to SEN groups. Model 3 includes additional school and student characteristics that explain some of the variation in children's wellbeing scores. Note that there is a significant interaction between gender and SEN group which is discussed further below.

Model 1 (differences between SEN groups) shows, consistent with Chapter 4 (Table 4.13) that children with special educational needs have lower wellbeing than children without special educational needs. Model 1 explains 3.8% of the variance for wellbeing scores.

Model 2 (accounting for wellbeing scores at age 9) shows, again consistent with previous analyses (Chapter 5, Table 5.5 that children with special educational needs still have significantly lower scores than children without special educational needs at either age, even after account is taken of their wellbeing score at age 9. Model 2 accounts for about 9% of the variation in wellbeing at age 13. However, the differences between children without special educational needs and children in each of the three SEN groups is smaller in Model 2 than Model 1.

For example, in Model 1, children with special educational needs at age 9 only had a mean wellbeing score that is 3.43 points lower than children with no special educational needs at either age. This reduces to 2.07 points in Model 2. Model 2 also shows that, for every 1-point increase in wellbeing scores at age 9, there is an expected increase in these scores of 0.29 points at age 13.

Table 6.3: Multilevel models of children's Piers-Harris (wellbeing) scores at age 13

Characteristic	Model 1	Model 2	Model 3
Student level			
SEN group [RefGroup = no SEN either wave]			
SEN Age 9 only	**-3.425**	**-2.069**	**-3.430**
SEN Age 13 only	**-4.472**	**-3.541**	-3.362
SEN Ages 9 and 13	**-4.863**	**-3.286**	-1.724
Piers-Harris scores Age 9 (M=50, SD=10)		**0.292**	**0.269**
Year level (first year–second year)			**-2.068**
Gender (female–male)			**2.596**
Household composition [RefGroup = two parents both ages]			
One parent both ages			-2.234
One parent Age 9, two parents Age 13			0.665
Two parents Age 9, one parent Age 13			-2.340
Bullied at Age 9 (no-yes)			**-1.184**
Bullied at Age 13 (no-yes)			**-3.115**
Interactions			
Male x SEN Age 9 only			2.222
Male x SEN Age 13 only			1.904
Male x SEN Ages 9 and 13			-2.351
% of variance explained	3.8	8.9	16.1

Values in bold are statistically significant (p < .01). Values in grey are statistically significant (p < .05). Cells with borders indicate that the variable is involved in a statistically significant interaction.

Model 3 (additional school and student characteristics) must be interpreted with care due to the interaction between gender and SEN group. Model 3 accounts for 16.1% of the variation in children's wellbeing scores. Comparing Models 2 and 3, the addition of significant background characteristics[94] (i.e. year level, gender, household composition, and being bullied at age 9 and/ or 13), accounts for an additional 7.2% of the variation in children's wellbeing scores.

Regarding the interaction between gender and SEN group, it would be incorrect to read from the table that the difference in wellbeing scores between children with no special educational needs and children with special educational needs at age 9 only is 3.43 points (first row), since the effects for SEN group, gender, *and* the interaction terms must be added together. The interactions are plotted in Figure 6.3 (and their exact values shown in Table A4.18 in Appendix 4).

Figure 6.3 shows that, among children without special educational needs in either wave, boys' wellbeing scores are about 2.6 points higher than that of girls, on average. However, the gender difference in favour of boys is larger among children with special educational needs at age 9 only, and at age 13 only (about 4.8 and 4.5 points, respectively). The gender difference among children with special educational needs at both age 9 and 13 is all but non-existent (0.2 points). Therefore, girls with special educational needs at age 9 only and at age 13 only may be considered relatively more vulnerable on this measure, while boys with special educational needs at both age 9 and 13 are more vulnerable.

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[94] Non-significant variables in the model 3 of wellbeing were: post-primary school DEIS status, primary school DEIS status, parental education, school sector, and percentage of household income from social welfare.

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Figure 6.3: Plot of interactions between gender and SEN group for wellbeing scores at age 13 (Model 3 in Table 6.3)
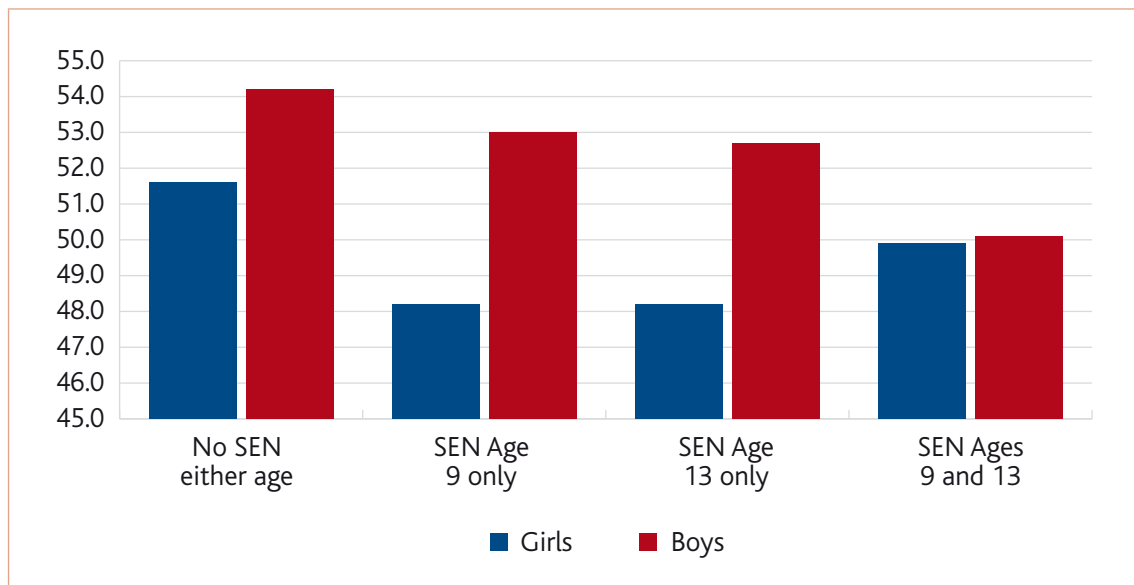
The finding that being bullied at age 13 is associated with lower wellbeing scores (with a difference of about -1.2 points) may well be expected, but the finding that being bullied at age 9 has a significant, and moderate-sized association, with children's wellbeing scores at age 13 (with a difference of -3.1 points) is noteworthy in that it suggests a longer-term negative impact of bullying on children's wellbeing.

Model 3 also shows that children in one-parent families have significantly lower Piers-Harris scores than children in two-parent families, and that children in Second Year have lower Piers-Harris scores. Both of these findings are consistent with previous research (Smyth *et al.*, 2006; Fahey, Keilthy, & Polek, 2012, Table 7.4).

6.5   Multilevel models of being bullied

Table 6.4 shows the results of the multilevel models of parents' reports of their child being bullied at age 13. As with previous sections, Model 1 includes SEN groups only, Model 2 includes SEN groups and being bullied at age 9, and Model 3 includes SEN groups, being bullied at age 9, and additional background characteristics that are significantly associated with being bullied at age 13.

Unlike the previous models, this is a *logistic regression*, since the outcome is binary (bullied–not bullied). Therefore, the results in the table are odds ratios. It is not possible to partition the variation in being bullied into between and within school components, so we can't say anything about the extent to which schools differ with respect to reports of bullying.

Model 1 (differences between SEN groups) shows, broadly consistent with Chapter 5 (Table 5.6), that children with special educational needs are generally more likely to have been bullied, particularly children with special educational needs at age 13 only, who were about 4.7 times more likely to have been bullied than children without special educational needs in either wave. SEN groups in Model 1 accounts for 5.8% of the variance related to being bullied at age 13.

Model 2 (accounting for being bullied at Wave 1) explains about 9.9% of the variation in being bullied at age 13. The model confirms that children who had been bullied at age 9 (Wave 1) were 2.7 times more likely to be bullied at age 13. Tests for interactions between bullied at Wave 1 and the SEN groups (not shown here) were not statistically significant. In other words, the increased likelihood of being bullied at age 13 that arises from having been bullied at age 9 applies equally across SEN groups.

Table 6.4: Multilevel models (odds ratios) of parents' reports of their child being bullied (yes–no) at age 13

Characteristic	Model 1	Model 2	Model 3
Student level			
SEN group [RefGroup = no SEN either wave]			
SEN Age 9 only	1.440	1.277	1.274
SEN Age 13 only	**4.682**	**3.826**	**3.624**
SEN Ages 9 and 13	**2.730**	**2.233**	**1.956**
Bullied at age 9 (no-yes)		**2.692**	**2.606**
Year level (first year-second year)			0.776
Gender (female-male)			**0.731**
Household composition [RefGroup = two parents both waves]			
One parent both ages			1.425
One parent Age 9, two parents Age 13			1.349
Two parents Age 9, one parent Age 13			**1.880**
Number of close friends at Age 13			**0.840**
% of variance explained (pseudo R^2)	5.8	9.9	13.2

Values in bold are statistically significant (p < .01). Values in grey are statistically significant (p < .05). Percentage of variance explained was estimated in SPSS and does not take clustering of children in schools into account.

Model 3 (additional background characteristics) explains a total of 13.2% of the variation in relation to being bullied at age 13, which is an additional 3.3% on model 2. In addition to SEN group and being bullied at age 9 (included in model 2), Model 3 includes the significantly[95] associated variables: children's year level, gender, household composition, and number of close friends at age 13.

Children with special educational needs at age 9 only appear to be less vulnerable to being bullied than children with special educational needs at both ages 9 and 13, and children with special educational needs at age 13 only. Children with special educational needs at age 13 only appear to be particularly vulnerable to bullying. Bullying at age 13 was significantly less likely to occur among Second Year students compared to students in First Year.

A lower likelihood of bullying was associated with boys (girls were about 1.37 times more likely to have parents report that they were bullied than boys). Children in one-parent families were more likely to be bullied. On the other hand, the number of close friends that children had at age 13, according to their parents, is associated with a lower likelihood of being bullied. Having close friends may therefore act as a protection against bullying among some children.

Due to the way bullying was asked (bullied–not bullied), we cannot say anything about the extent to which schools differ with respect to the prevalence of children being bullied. This said, no school-level characteristics were associated with being bullied (i.e. post-primary school sector and DEIS status, and primary school DEIS status). The models have not examined the perceived reasons for being bullied, nor the impact of bullying on children.

6.6   Multilevel models of verbal reasoning test scores

Table 6.5 shows the results of three multilevel models of children's verbal reasoning scores at age 13. Analysis shows that 13.5% of the variation in verbal reasoning scores at age 13 is between schools, and 86.5% is within schools (between individual children). Across all children in the dataset, reading scores have a mean of 100 and a standard deviation of 15. Note that, of the 6817 children in the multilevel model dataset, 331 (4.6%) were missing verbal reasoning test scores at one or both waves and had to be excluded from the analyses shown in this section.

Model 1 (differences between SEN groups) explains 6.7% of the total variation in verbal reasoning scores. Consistent with Chapter 4 (Table 4.18), Model 1 shows that children with special educational needs have significantly lower verbal reasoning scores than their peers without special educational needs at either age.

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[95]   Variables not significantly associated with Model 3 of being bullied at age 13 are, number of close friends at age 9, parental education, percentage of household income from social welfare, post-primary school sector, post-primary DEIS status, and primary DEIS status. In addition, tests for interactions between SEN group and gender were not significant.

Model 2 adds children's reading scores at age 9, and explains a considerable amount of variation in verbal reasoning scores at age 13 – 43.6%. Model 2 shows that children with special educational needs at age 13, and with special educational needs at both age 9 and 13, have verbal reasoning scores that are still significantly lower than children without special educational needs at either age, but the difference is much smaller. Once account is taken of children's reading scores at age 9, there is no statistically significant difference between children with special educational needs at age 9 only and children without special educational needs at either age, meaning those children are doing about as expected on reading, given their scores at age 9.

Model 3 (additional background characteristics) explains a total of 49.1% of the variation in relation to verbal reasoning scores at age 13, which is an additional 5.5% on model 2. In addition to SEN group and reading score at age 9 (included in model 2), Model 3 includes the significantly[96] associated variables: children's year level, gender, parental education, primary level DEIS status, and liking of school at age 13.

It is important to note when interpreting this model that an interaction between gender and SEN group forms part of Model 3 (similar to the model for wellbeing scores described in Section 6.4), so that the verbal reasoning score differences for boys and girls in the different SEN groups must be interpreted with care. It would be incorrect, for example, to read from Table 6.5 that the difference in verbal reasoning scores between children with no special educational needs and children with special educational needs at age 9 only is 1.47 points (first row), since the effects for SEN group, gender, *and* the interaction terms must be added together. The interactions are plotted in Figure 6.4 (and their exact values shown in Table 6.5).

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[96] Variables not significantly associated with Model 3 of verbal reasoning at age 13 are, Post-primary school sector, days absent at ages 9 and 13, liking of school at age 9, percentage of household income from social welfare, household composition, wellbeing scores at ages 9 and 13, being bullied at ages 9 and 13.

Table 6.5: Multilevel models of children's verbal reasoning scores at age 13

Characteristic	Model 1	Model 2	Model 3
Student level			
SEN group [RefGroup = no SEN either wave]			
SEN Age 9 only	**-7.791**	-1.204	-1.467
SEN Age 13 only	**-5.544**	-1.818	-1.345
SEN Ages 9 and 13	**-11.168**	-1.461	**-3.525**
Reading score at Age 9 (M=100, SD=15)		**0.643**	**0.611**
Year level (first year-second year)			**-1.692**
Gender (female-male)			**3.511**
Parental Education [RefGroup: Postsecondary diploma, cert, or apprenticeship]			
Lower second level			**-2.030**
Primary degree			**2.287**
Postgraduate degree			**3.344**
Primary level DEIS status [RefGroup: non-DEIS]			
DEIS Band 1			**-3.026**
DEIS Band 2			-1.507
Rural DEIS			0.024
Liking of school at Age 13 [RefGroup: medium level of liking]			
High level of liking school			0.415
Low level of liking school			**-2.657**
School level			
Post-primary DEIS status (no-yes)			**-1.595**
Interactions			
Male x SEN Age 9 only			0.785
Male x SEN Age 13 only			-0.378
Male x SEN Ages 9 and 13			**2.584**
% of variance explained	6.7	43.6	49.1

Values in bold are statistically significant (p < .01). Values in grey are statistically significant (p < .05). Cells with borders indicate that the variable is involved in a statistically significant interaction.

The final model shows that, over and above the other characteristics considered, children who expressed a low liking of school at age 13 had significantly lower verbal reasoning scores than children expressing medium or high levels of liking. The difference is about 2.7 points. This confirms the importance of engaging children's interest in school. Chapter 4 (Table 4.4) showed that 11.6% of children did not like school (and that 9.6% of children without special educational needs and 17.4% of children with any special educational needs did not like school). Although in the minority, the numbers of children expressing a dislike of school is substantial. The significant association between dislike of school and reading achievement (after accounting for the other measures in the model) suggests that further examination of why children don't like school is merited.

Model 3 also confirms the advantage in children's verbal reasoning scores that is associated with higher levels of parental education. For example, children with parents with a postgraduate degree had a verbal reasoning score about 3.3 points higher than children whose parents had a post-school diploma, certificate or apprenticeship.

Model 3 also showed that, despite having an additional year of schooling, children in Second Year had a verbal reasoning score that is 1.7 points lower, on average, than children in First Year, even after accounting for the other characteristics in the model. This is counterintuitive in that children in Second Year would have had an additional year of schooling compared to First Years. However, this finding is consistent with existing longitudinal research (Smyth *et al.*, 2006) which showed a dip in academic performance, along with a decline in interest in and engagement in school, among Second Years. Year level did not interact with SEN group, which means that children in Second Year scored significantly lower in verbal reasoning than children in First Year, regardless of SEN status.

Verbal reasoning scores did not differ across school sector, but were significantly lower among children in DEIS post-primary schools than in non-DEIS schools (the difference is about 1.6 points). This finding suggests a modest 'social context effect' since this reading score difference associated with DEIS/non-DEIS is occurring over and above individual student characteristics. However, this social context effect is indicative of deep-rooted societal inequalities rather than inequalities between schools *per se*. Importantly, perhaps, the model also showed that the primary school attended by children has a bearing on their verbal reasoning test scores at the age of 13. Children in DEIS Band 1 schools had a mean verbal reasoning score that was 3.0 points lower than children who had attended non-DEIS primary schools. This significant difference is occurring in conjunction with the score difference observed between DEIS and non-DEIS *post-primary* schools.

Taking the above two findings together implies that children who attended DEIS Band 1 primary schools and a DEIS post-primary school have an expected verbal reasoning score that is 4.6 points lower than children who attended non-DEIS primary and non-DEIS post-primary schools. The fact that DEIS school status at both primary and post-primary levels is associated with reading scores in the final model implies a cumulative effect of children's schooling on reading performance.

Figure 6.4: Plot of interactions between gender and SEN group for verbal reasoning scores at age 13 (Model 3 in Table 6.5)
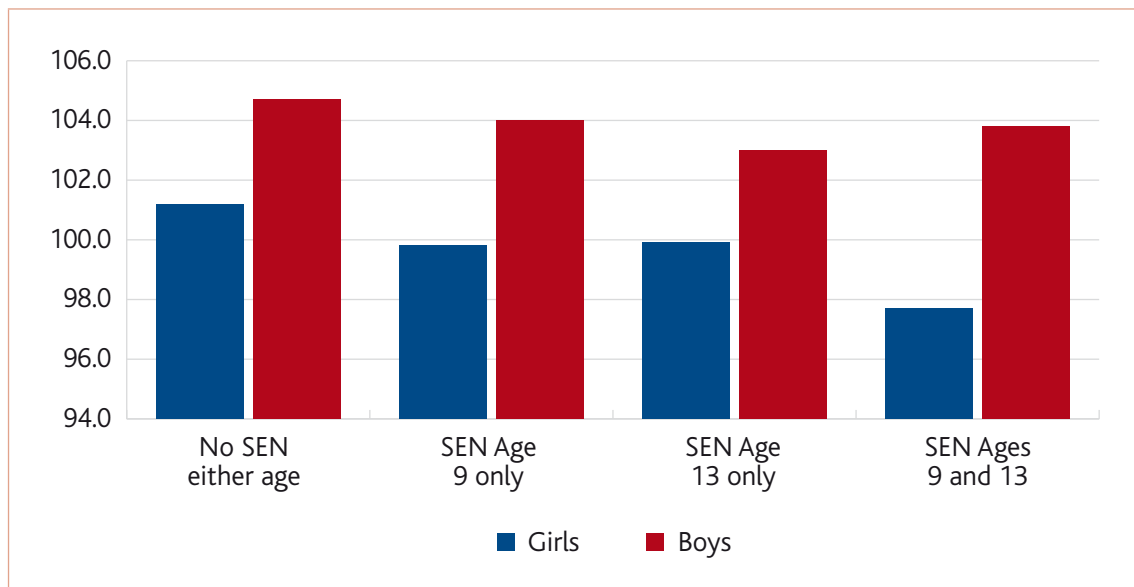
The final model for reading test scores included an interaction between gender and SEN group such that the lowest verbal reasoning scores were associated with girls with special educational needs at both ages 9 and 13 (Figure 6.4). The reasons for this cannot be inferred from the models, and this finding could be related to the particular needs of girls with special educational needs at ages 9 and 13. In any case, it merits further investigation.

Figure 6.4 (and Table A4.19 in Appendix 4) shows that, among children without special educational needs in either wave, boys' verbal reasoning scores are about 3.5 points higher than that of girls, on average.[97] However, the gender difference in favour of boys is larger – about 6.1 points – among children with special educational needs at ages 9 and 13, while it is 4.3 points among children with special educational needs at age 9 only, and 3.1 points among children with special educational needs at age 13 only. Among girls, those with the lowest verbal reasoning scores had special educational needs at ages 9 and 13 (97.7 points compared with 101.2 points for girls without special educational needs). Among boys, the lowest scores are associated with special educational needs at age 13 only (103.0 compared to 104.7 points for girls without special educational needs).

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[97] This verbal reasoning score advantage is not usual for boys. However, just looking at gender on its own, boys' scores are 3.0 (one-fifth of a standard deviation) higher than those of girls. This gender difference is likely to have arisen from a combination of two or more factors. First, the Verbal Reasoning Test used in Wave 2 of GUI was developed by the ERC and consisted of a subset of 20 out of 70 items, and by chance, these appear to have slightly favoured males. Second, differences in attrition rates among low-achieving girls and boys may have augmented this difference (ERC, personal communication, June 16, 2015).

Since the gender difference on the verbal reasoning test is unexpected, and complicates the interpretation of the gender interaction, Figure 6.5 and Table A4.20 (in Appendix 4) show the interactions assuming that there is no overall gender difference in performance. The results are clearer here: there is a verbal reasoning score disadvantage of about 2.6 points evident among girls with special educational needs at age 9 and 13 compared to boys with special educational needs at age 9 and 13.

Figure 6.5: **Plot of interactions between gender and SEN group for verbal reasoning scores at age 13 (Model 3 in Table 6.5, assuming no gender difference on the verbal reasoning test)**
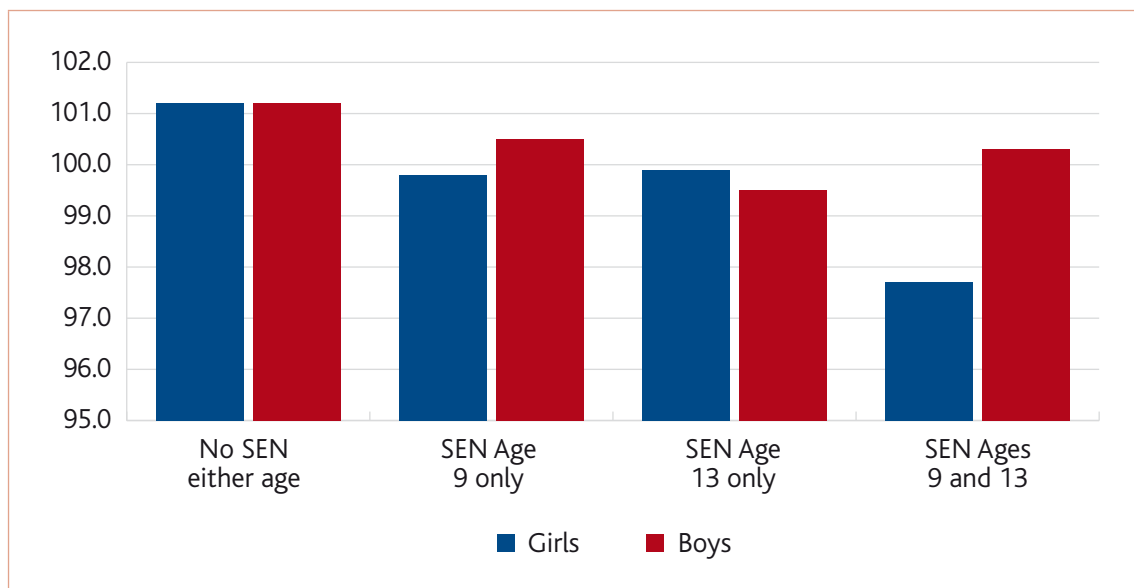
6.7   Multilevel models of numeric ability test scores

Table 6.6 shows the results of three multilevel models of children's numeric ability scores at age 13. Analysis shows that 16.8% of the variation in verbal reasoning scores at age 13 is between schools, and 83.2% is within schools (between individual children). The between-school variation for verbal reasoning scores was 13.5%; therefore, schools differ slightly more to one another in terms of average mathematics achievement. However, it would be wrong to conclude that some schools are 'better' than others in terms of mathematics achievement. It shows, rather, that the academic and social composition of schools in which GUI children happen to be enrolled differ somewhat to one another. This said, schools appear to differ more in terms of average mathematics achievement than reading achievement; this is not unexpected, given that mathematics is a more curriculum-dependent set of skills, knowledge and procedures.

As for verbal reasoning, the overall mean for the numeric ability test is 100, and the standard deviation is 15. Also like verbal reasoning, it should be noted that, of the 6817 children in the multilevel model dataset, 273 (4.0%) were missing numeric ability test scores at age 9 and/or age 13 and had to be excluded from the analyses shown in this section.

Model 1 (differences between SEN groups) accounts for 7.6% of the total variation in numeric ability test scores. The score differences between the SEN groups are quite large, and similar to those observed in Model 1 for the verbal reasoning test scores (Section 6.6, Table 6.5). Relative to children without special educational needs at either age, children with special educational needs at age 9 only have a numeric ability score that is 8.0 points lower on average, and the score differences for children with special educational needs at age 13 only and at age 9 and 13 are 6.4 and 10.9 points, respectively.

Model 2 (accounting for mathematics scores at age 9) accounts for 33.1% of the total variation for numeric ability, with 25.5% of variation attributable to mathematics scores at age 9. Consistent with Model 2 for verbal reasoning (Section 6.6, Table 6.5), the differences in the numeric ability scores of children with and without special educational needs are a lot smaller, but are still moderate in size, ranging from 3 to 5 score points. All are statistically significant ($p < .001$). Despite the moderate effect, children with special educational needs at age 9, at age 13, and at ages 9 and 13, are scoring lower than would be expected, given their performance in mathematics at age 9.

Table 6.6: Multilevel models of children's numeric ability scores at age 13

Characteristic	Model 1	Model 2	Model 3
Student level			
SEN group [RefGroup = no SEN either wave]			
SEN Age 9 only	**-8.001**	**-3.650**	**-3.184**
SEN Age 13 only	**-6.368**	**-3.277**	**-2.710**
SEN Ages 9 and 13	**-10.878**	**-4.600**	**-4.587**
Mathematics score at Age 9 (M=100, SD=15)		**0.510**	**0.496**
Year level (first year-second year)			**-4.302**
Gender (female-male)			**3.404**
Parental Education [RefGroup: Postsecondary diploma, cert, or apprenticeship]			
Lower second level			**-2.059**
Upper second level			-0.618
Primary degree			**2.640**
Postgraduate degree			**3.790**
Primary level DEIS status [RefGroup: non-DEIS]			
DEIS Band 1			**-3.302**
DEIS Band 2			-1.399
Rural DEIS			1.985

Characteristic	Model 1	Model 2	Model 3
Student level			
Liking of school at Age 13 [RefGroup: medium level of liking]			
High level of liking school			0.556
Low level of liking school			**-4.372**
Liking of school at Age 9 [RefGroup: medium level of liking]			
High level of liking school			0.151
Low level of liking school			**-2.728**
School level			
Post-primary DEIS status (no-yes)			**-2.135**
% of variance explained	7.6	33.1	41.4

Values in bold are statistically significant (p < .01).

Model 3 is the full, or final, model for numeric ability test scores, and explains 41.4% of the total variation in mathematics scores. Significant variables[98] added to Model 3 account for 8.3% of the variation in mathematics scores; these include gender, year level, post-primary DEIS status, primary DEIS status, liking of school at age 9 and 13, and parental education.

The model confirms that, even after accounting for a range of background characteristics, as well as children's mathematics scores at age 9, children with special educational needs still have lower than expected numeric ability scores at age 13. Compared to children without special educational needs at either age, children with special educational needs at age 9 only have numeric ability scores that are 3.2 points lower, children with special educational needs at age 13 only have numeric ability scores that are 2.7 points lower, and children with special educational needs at age 9 and 13 have numeric ability scores that are 4.6 points lower. This contrasts with the situation for verbal reasoning and implies that children with special educational needs may be underperforming in mathematics/numeric ability at age 13 relative to how they were doing at age 9.

The final model showed that, despite having an additional year of schooling, children in Second Year had a reading score that is 4.3 points lower, on average, than children in First Year, even after accounting for the other characteristics in the model. This is a medium-sized difference, and larger than the corresponding difference for the model of verbal reasoning test scores (1.7 points). Year level did not interact with SEN group, which means that children in Second Year scored significantly lower in verbal reasoning than children in First Year, regardless of SEN status. This difference is larger than the equivalent difference for verbal reasoning (2.0 score points). This finding suggests that a 'Second Year disengagement factor' may have stronger negative consequences for children's performance in mathematics than in reading.

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[98]   Non-significant variables in Model 3 for mathematics scores at age 13 include: post-primary school sector, days absent at age 9 and 13, percentage of household income from social welfare, household composition, Piers-Harris scores at age 9 and 13, being bullied at age 9 and 13. There were no interactions between gender and SEN group and year level and SEN group.

Similar to the model for verbal reasoning, numeric ability scores did not differ across school sector, but were significantly lower (by about 2.1 points) among children in DEIS post-primary schools than in non-DEIS schools. As with the model of verbal reasoning (Section 6.6), Model 3 for numeric ability shows a significant association between mathematics performance and DEIS status of *both* the primary and post-primary schools that children attended. While children who had attended DEIS Band 2 and Rural DEIS schools scored around the same as children who had attended non-DEIS primary schools, the numeric ability scores of children who had attended DEIS Band 1 schools had, on average, a numeric ability score that is 3.3 points lower than that of children in non-DEIS primary schools. Therefore, the expected numeric ability score of a child who had attended a DEIS Band 1 primary school and was in a DEIS post-primary school at Wave 2 is 5.4 points lower than that of a child who did not attend a DEIS school at either primary or post-primary levels.

This finding confirms the presence of a modest 'social context effect' since this numeric ability score difference associated with DEIS/non-DEIS is occurring over and above individual student characteristics. This social context effect is symptomatic of more generalised societal inequalities rather than differences between schools, *per se*.

The final model shows that, over and above the other characteristics considered, children who expressed a low liking of school at both age 9 and 13 had significantly lower numeric ability scores than children expressing medium or high levels of liking. The difference is about 2.7 points for dislike of school at age 9, and 4.4 points for dislike of school at age 13. This finding adds robustness to a similar finding for the model of reading achievement and suggests that further examination of why children don't like school is merited. In addition, it could suggest that, in the case of mathematics at least, dislike of school can start early and have a lasting impact on school performance.

Finally, Model 3 also shows that boys outperformed girls on the numeric ability test by 3.4 points, and that children whose parents had higher levels of education had higher scores on the numeric ability test. For example, children whose parents had a primary degree had an expected numeric ability score that is 2.6 points higher than children whose parents have a diploma, certificate, or apprenticeship.

6.8   Summary and conclusions

This chapter examined the extent to which background characteristics are related to changes in five of the children's outcomes over time. The outcomes examined were days absent from school, wellbeing scores, being bullied (parents' reports), verbal reasoning test scores, and numeric ability test scores. About 91% of the total of 7525 children were included in the analysis (with 9% excluded due to missing data). Children were classified into four groups: children without special educational needs at either age (78.9% of children in the multilevel dataset), with special educational needs at age 9 only (7.2%), special educational needs at age 13 only (6.1%), and special educational needs at both age 9 and 13 (7.7%). Because a sub-set of children were included in the analyses in this chapter, results are not directly comparable to analyses presented in previous chapters (however, they are generally consistent with what was presented previously).

Data were analysed using multilevel modelling, which takes account of the fact that children were clustered into schools. On average, there were 11 GUI children in each of the 618 post-primary schools included in the analysis. Children in primary and special schools were not included in the analyses due both to the small numbers of children in each of these settings, and the fact that school characteristics are quite different in these two settings compared to post-primary schools.

The composition and kinds of SEN differed across the three SEN groups. This is likely to be related to a number of different factors, such as the developmental nature of some special educational needs, severity, and ease of its identification. Chapter 2 (Section 2.3) explores the composition of the three groups for *all* children who took part in Wave 2 of GUI.

As noted in Chapter 2, further examination of the data would be required to explore why the composition of these groups differ. The differences in the composition of the groups should be borne in mind when interpreting the results of the multilevel models.

For each of the five outcomes, three models were examined:

- Model 1: SEN groups only.

- Model 2: SEN groups plus the outcome at age 9.

- Model 3: SEN groups, outcome at age 9, and additional school and child characteristics. Where relevant, Model 3 included interactions between SEN groups and other background characteristics in the model (such as gender).

In the multilevel models of *days absent from school at age 13*, only 8% of the variation in absence rates was between schools, and none of the school characteristics examined (post-primary school sector and DEIS status, primary school DEIS status) were related to days absent from school. This suggests that targeting supports at individual children with low attendance coupled with robust individual-level attendance records would be more effective than school-level attendance policies on their own. Note that the analysis did not include reasons for children's absences from school.

The final model of days absent from school highlighted the importance of positive adjustment in transitioning to post-primary school for attendance rates of children in general. For children with special educational needs at age 9 only and at ages 9 and 13, attendance rates were the same as for children without special educational needs at either age, once account was taken of their level of adjustment to post-primary school. For children with special educational needs at age 13 only, attendance rates were still significantly lower than children without special educational needs at either age, however. Chapter 4 (Table 4.3) showed that most schools have multiple supports to help children to adjust to post-primary school. It may be worth examining the extent to which these are effectively targeted to the specific and varied needs of the cohort of new entrants to schools.

The presence of socio-economic characteristics in the final model confirms socio-economic inequalities in children's attendance rates. The fact that these, along with children's attendance patterns at age 9, were in the final model, indicate the importance of promoting, supporting and maintaining good attendance patterns in children from an early age.

In the models of *children's wellbeing, as measured by Piers-Harris scores*, only about 7% of the variation in scores was between schools. This means that most of the variation in children's wellbeing is between individual children rather than between schools. Wellbeing scores did not vary across post-primary DEIS status or post-primary school sector, or primary school DEIS status.

The models indicated two findings that merit further investigation. First, being bullied at age 9 has a negative association with wellbeing scores at age 13. This suggests a long-term negative impact of bullying. However, the model does not provide any information on the nature or extent of bullying experienced. Examining this further may help to identify more and less vulnerable children. Second, the interaction between gender and SEN group suggests different levels of vulnerability among children in the three SEN groups, depending on whether they are boys or girls. For example, boys with special educational needs at age 9 and 13 appear to be relatively vulnerable, while girls with special educational needs at age 9 only and age 13 only had the lowest wellbeing scores. These differences could be related to the composition of these groups being somewhat different among boys and girls, though further examination would be needed to better understand this finding.

Multilevel models of *parents' report of the study child being bullied* indicated that no school-level characteristics were associated with being bullied (i.e. post-primary school sector and DEIS status, and primary school DEIS status). A lower likelihood of bullying was associated with boys (as opposed to girls), Second Years (as opposed to First Years), and having more close friends (as opposed to fewer). Having close friends may therefore act as a protection against bullying among some children. The models of being bullied did not examine the perceived reasons for being bullied, nor the impact of bullying on children.

About 13.5% of the variation in *children's verbal reasoning scores at age 13* are between schools. This does not mean that some schools are 'better' or 'more effective' than others in terms of reading achievement. It simply shows that the academic and social composition of schools in which GUI children happen to be enrolled differ somewhat to one another.

Verbal reasoning scores did not differ across school sector, but were significantly lower among children in DEIS post-primary schools than in non-DEIS schools (the difference is about 1.6 points). This finding indicates a modest 'social context effect' since this verbal reasoning score difference associated with DEIS/non-DEIS is occurring over and above individual student characteristics. However, this social context effect is indicative of deep-rooted social and economic inequities and should not be interpreted as being indicative of particular schools attended by the GUI children.

Once account was taken of children's reading scores at age 9, the differences between the verbal reasoning scores of children without special educational needs at either age, and children with special educational needs at age 9 only, age 13 only, or both ages, ranged between 1 and 2 score points. In the case of children with special educational needs at age 9 only compared to children without special educational needs, the difference was not statistically significant, meaning that children with special educational needs at age 9 only were scoring at about the expected level on the reading test at age 13, given their performance on the reading test at age 9. Children with special educational needs at age 9 and 13, and at age 13 only, are scoring just marginally below what would be expected at age 13 given their reading scores at age 9.

The final model for verbal reasoning test scores included an interaction between gender and SEN group such that the lowest reading scores were associated with girls with special educational needs at both age 9 and 13. The reasons for this cannot be inferred from the models, and this finding could be related to the particular needs of girls with special educational needs at age 9 and 13. This finding merits further investigation.

About 17% of the variation in *children's numeric ability scores at age 13* are between schools. Therefore schools appear to differ more in terms of average mathematics achievement than reading achievement. This is to be expected, given that mathematics is a more curriculum-dependent domain than reading.

Similar to the model for verbal reasoning, numeric ability scores did not differ across school sector, but were significantly lower (by about 2.1 points) among children in DEIS post-primary schools than in non-DEIS schools. This finding again confirms the presence of a modest 'social context effect'. As already noted with respect to the model for verbal reasoning, this social context effect is indicative of much broader socio-economic inequities.

Once account was taken of children's mathematics scores at age 9, the differences between the numeric ability scores of children without special educational needs at either age, and children with special educational needs at age 9 only, age 13 only, or at both age 9 and 13, reduced to less than they had been previously. However, the score differences even after accounting for age 9 mathematics scores between children without special educational needs and with special educational needs ranged from about 3 to 5 points. This implies that children in all three SEN groups were scoring somewhat below the expected level on the numeric ability test at age 13, given their performance on the mathematics test at age 9.

The analyses presented here are not without limitations. First, as with any single set of analyses, the results can only provide partial information to address the research questions. Second, some of the outcomes are related to one another (such as being bullied and wellbeing scores; see also Tables 4.24 and 4.25 in Chapter 4. This is not unexpected, but multilevel modelling, which treats each outcome in a separate analysis, does not take this inter-relatedness into account. Structural equation modelling techniques, which allow for these inter-relationships, could be used to extend the analyses presented here in order to provide a more developed understanding of some of the findings. Third, the tests of verbal reasoning and numeric ability are short, general standardised achievement tests; they were not designed specifically for children with special educational

needs; nor were they designed to be particularly curriculum-sensitive at either primary or post-primary levels. Fourth, as noted already, we have not included children in special schools or primary schools so the results can only be used to inform policy and practice in post-primary schools.

In conclusion, we suggest that the findings presented in this chapter offer a starting point for preliminary consideration in policy advice formulation, though many of the findings require further research and analysis. We also underline the fact that the educational and other experiences of children with special educational needs are not occurring in isolation from other children in post-primary schools, and that a sensible strategy to advance the findings and suggestions here is to further examine vulnerable groups in general, children with special educational needs among them.

7. Conclusions and policy implications

The aim of this chapter is not to overview all of the findings from the report, but to revisit some of the issues that arose in the literature review and in many of the results of the present analysis.

Eight such issues – many of which are inter-related – are dealt with:

- Resource allocation

- Prevalence and stability of SEN classifications

- The relationship between SES and SEN

- Continuities in outcomes

- Reading and mathematics achievement

- Transition from primary to post-primary school

- Subject choice and future educational opportunities

- Mental health and wellbeing.

Prior to doing so, a consideration is given to the conclusions and recommendations that arose from Phase 1 of the study. We also note some of the limitations of the study, which should be taken into account when considering the implications of the findings.

In the broader context of national policies to improve children's lives, both *Better Outcomes, Brighter Futures* (Department of Children and Youth Affairs, 2014) and *Healthy Ireland* (Department of Health, 2013) recognise the importance of improved cross-sectoral collaboration and co-ordination, as well as a prioritising of early identification and intervention. Many of the findings in this study, particularly those relating to the emotional wellbeing of children with special educational needs, and the evidence for trajectories in school disengagement over time, underline the importance of these policies.

7.1 Limitations of the study

As with any single study, this one is not without limitations: GUI was not designed specifically to examine children with special educational needs, and the SEN classification scheme is not ideal. It was not possible, in the case of the GLDD group, to distinguish between mild, moderate and severe/profound learning disabilities; children with a range of physical or sensory disabilities were classed into a single group; and the identification of children with BESD had to be inferred from parents' responses (and many children with BESD would not be formally identified within existing SEN support provision structures). The numbers of children in some of the groups (children with ASD, physical or sensory disability, and multiple/unclassified SEN) are small. A more detailed description of the limitations of the classification scheme is outlined in Appendix 2.

Also, even though GUI is a very high-quality study, the sample of children at Wave 2 were slightly more socio-economically advantaged than the population, due to loss of participants between Waves 1 and 2. For the measures of achievement (numeric ability and verbal reasoning), response rates were lower among children with SEN than without SEN, meaning that we cannot be overly confident in the generalisability of the achievement test results of children with special educational needs. Moreover, the achievement tests administered in GUI may not have been suited to some children, since they are norm-referenced standardised tests.

As with any questionnaire-based survey, measures are based on self-reports, which are prone to subjectivity bias. For example, parents and children were asked about children's experiences of bullying, and the meaning of bullying is likely to vary across individuals (especially in the absence of a definition of bullying); principals were asked to estimate the percentages of children in the school with literacy, numeracy and emotional and behavioural difficulties, and respondents may be using different 'yardsticks' to define these difficulties, depending on local contexts.

Many of the issues raised in this report point to complex social, educational, emotional, cognitive and societal processes. Ideally, qualitative data would provide deeper insights into these children's realities but, unfortunately, was not collected as part of wave 2 of GUI. Cosgrove *et al.*'s (2014) analyses of the qualitative data from wave 1 may provide a basis for developing new research in this area.

Also, it should be noted that, while the outcomes considered in this report draw on Douglas *et al.*'s (2012) framework, children's physical health was not included in the analyses, that is, wellbeing was limited to emotional and psychological health.

Having made these points, the study has considerable strengths. It has allowed, for the first time in an Irish context, the opportunity to have detailed examination of changes in special educational needs over time, to look at progress of children with special educational needs on a range of outcomes, both educational and other, and to investigate socio-economic inequalities in these outcomes. The profile of children in the SEN groups provided in Table 4.24 (Chapter 4) may serve as a useful tool for policy development.

7.2 Conclusions from Report 1 reviewed with key findings from this report

Cosgrove *et al.*'s (2014, Chapter 7) conclusions identified five key areas of importance arising from the results in the first report of this study, and some of these areas have been subject to change through recent policy developments and/or the topic of further or ongoing research. As described in Chapter 1, the most significant policy development is the proposed new model for resource allocations for SEN (NCSE, 2014), the pilot of which has finished. The following is a brief commentary on progress in these five areas.

First, Cosgrove *et al.* (2014) highlighted the need to continue efforts to implement individualised education plans (IEPs) and monitor progress. They called for specific assessment tools for monitoring progress, along with professional development support in the use of any such tools. The education planning aspect of the EPSEN Act is still deferred. A development in this area has been the concept of the Personalised Pupil Plan (PPP). Section 15 of Circular 0030/2014 (DES, 2014) indicates that a Personalised Pupil Plan (PPP) should be a feature of provision for all students with special educational needs who have access to a special needs assistant. This is a move towards more holistic and integrated planning. A key issue here is access to health therapies in an equitable manner to meet the education, social and care needs of students with special educational needs. This is not just a resources issue but a structural one of professional collaboration that some argue requires legislation to work (Jones, 2016), and that other barriers to inter-agency collaboration exist (Crowson *et al.*, 1993).

Second, the identification of, and support for, children with BESD was an area suggested for priority. The findings of Phase 2 of the study confirm that children with BESD are socio-economically disadvantaged relative to many other children with SEN. Children with BESD did not fare well on any of the outcomes considered in this study. Work under the third area (below) may inform support for children with BESD, although it is our view that there is a need to further develop early assessment of, and supports for, these children.

Third, Cosgrove *et al.* (2014) indicated that more research in the extent to which children with SEN are clustered in particular schools be examined in order to inform decisions about resource allocations within existing initiatives, such as DEIS. Work by the Educational Research Centre is ongoing in this area and it is hoped that its work will inform this issue in due course.[99]

Fourth, the low educational engagement of some children, along with lower parental expectations for children with special educational needs, were highlighted by Cosgrove *et al.* (2014) as areas of concern. The findings in this report provide further evidence in these areas – in particular, a worsening in engagement, attendance, and parental educational expectations among children with SEN over time, and a widening of the gap in these outcomes between children with and without SEN. Two further areas have emerged from this report: (i) the need to look at supports for children as they transition from primary to post-primary, and to implement tailored, targeted supports alongside general forms of support, if needed, and (ii) the lower uptake of Irish by children with special educational needs and the implications that this may have for future educational opportunities.

Fifth, bullying of children with special educational needs was identified as an area for both policy intervention and further research by Cosgrove *et al.* (2014). The present study has revealed that experiences of and likelihood of bullying may be cumulative, that some children may be particularly vulnerable to bullying, and that it is common for bullied children to bully others.

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[99]   See www.erc.ie.

The broader findings of this study underline the need for schools to continue efforts to develop and enhance students' wellbeing, a new area of learning in the junior cycle on wellbeing (see http://www.juniorcycle.ie/Curriculum/Wellbeing), alongside national guidelines for schools on wellbeing (NCCA, 2017), and initiatives such as the *Schools for Health in Ireland* are welcomed in this regard. The *Schools for Health in Ireland* initiative entails collaboration between the Departments of Education and Skills and Health at local, regional and national levels.[100]

7.3   Resource allocation

A key component of the new resource allocation model that will be implemented in schools from September 2017, is the inclusion of school context in the determination of the school profile (NCSE, 2014). One of the elements is the extent of socio-economic disadvantage in the school and the link to increased levels of special educational needs. The data from the present analysis provide strong confirmatory evidence for the inclusion of measures of socio-economic disadvantage in this determination. The level of need arising out of the confluence of socio-economic and special educational needs issues means that the context for schooling can be very different depending on location. There are clear resource implications arising for prevention, early intervention and whole family and community initiatives that support solutions in a holistic manner. In the literature review, Rose *et al.* (2015) noted that it may require a legislative framework to ensure the co-ordination of health and education services and access in an equitable manner.

In Chapter 1, the issue of the use of a gender differential as part of the school context was outlined as an element of the new resource allocation model. This was based on many studies, Irish and international, which indicated that more boys than girls are identified with special educational needs. However, a comparison of children by time and duration of SEN using data from both ages 9 and 13 should be noted. Almost half of the children with special educational needs at age 13 only were girls (48.7%). While there was a small difference between boys (10.3%) and girls (7.4%) identified with special education needs at age 9 only, they were nearly the same (6.8% and 6.7%) at age 13 only. The difference is accounted for mostly by changes in the social and emotional or behavioural difficulties category. Contrary to the literature (NESSE, 2012) there were more girls (4.5%) than boys (3.8%) in this category at age 13 only.

The change in profile from a gender perspective between age 9 and 13 is worthy of further investigation, and may have implications for any future review of the new resource allocation model, as it applies in primary and particularly post-primary schools.

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[100]   See https://www.healthpromotion.ie/health/schools.

7.4   Prevalence and stability

Some movement is expected between categories of special educational needs over time, and especially over a four-year period between age 9 and age 13. Wolman *et al.* (1989) reported that most of the changes occurred in the post-primary years. As described in Chapter 1, issues influencing estimates of the prevalence of special educational needs across different countries include differences in definitions, funding models, resource allocation and access to assessment, along with the impact of interventions, and changing family and school contexts (Walker *et al.*, 1988).

In Chapter 2 the rationale behind the classification scheme used for both age 9 and age 13 analysis was presented. Using this classification approach, the estimated prevalence of special educational needs at age 9 is 20.6% and at age 13 it is 17.9%. The age 13 figure aligns with the estimate of 18% made in the NCSE's (2006) report on the implementation of the 2004 EPSEN Act. However, the decrease from age 9 to age 13 was not consistent across categories of special educational needs. There was a marked movement from general classifications to more specific categories. This is reflected in the decrease in the percentages of children with GLDD and multiple or unclassified special educational needs to an increase in the percentages of children with SLDD and ASD. This could be expected as over time some special educational needs may become clearer, particularly following further assessment at the transition point from primary to post-primary.

There were also some noteworthy changes in the distribution of boys and girls across the various categories of special educational needs. While overall more boys than girls were identified with special educational needs at both ages, at age 13 only nearly half of the children were girls (48.7%). Of these, 45% were classified as having behavioural, emotional or social difficulties. SLDD and ASD were more prevalent among boys.

In relation to the stability in the categories, it has been shown in the literature review (Walker *et al.*, 1988; Wolman *et al.*, 1989; Kocousta *et al.*, 2012) that changes can be expected across most categories but with some more fluid than others. In the present analysis there is evidence of some consistency but also of significant variation over the two time periods. It is likely that the policy context in Ireland also contributed to this. Students with dyslexia and mild general learning disabilities had access to resources under the General Allocation Model at primary level and didn't require an assessment, but require assessments for additional resource teaching at post-primary and possible examination exemptions (Irish) and accommodations.

In relation to children with behavioural, emotional or social difficulties, the variations across waves are more pronounced and suggest that some forms of BESD are developmental in nature and reduce rather than being long term. This ties with Forness *et al.* (2012) who distinguish between point prevalence and cumulative prevalence, and Dever *et al.* (2015) where 60% of children moved category between Time 1 and Time 2, with the majority moving to the normal risk category. Cumulative prevalence, with children having had a diagnosis at some stage in their childhood, often refers to children with internalising behaviours that 'wax and wane' over time. There may be value in monitoring these children as they progress through their childhood and into adolescence.

The variations in classification across the categories underline the need for capacity in the school system to assess children's cognitive, social, personal and emotional needs in an on-going manner so as to tailor responses to meet those changing needs. The change in profile in the behavioural, emotional and social difficulties area in particular has implications in relation to how schools can best identify and respond to children at risk of, and experiencing, difficulties. It is worth noting that few children with behavioural, emotional or social difficulties at age 13 only were receiving supports, whether in or outside school. The need for support for teachers and the development of assessment tools in this area was raised as a recommendation arising from the analysis in Report 1.

In Chapter 1, reference was made to an important aspect of the new model: the increased level of discretion at school level in terms of identification of students with special educational needs and resource deployment with a greater emphasis on student outcomes. The evidence from this study in terms of changes between special educational needs groups points to the need for sophisticated levels of teacher knowledge and skills in the identification of student learning strengths, interests and needs to inform a profile for planning. It also highlights the role of ongoing formative assessment as an aid to tracking and monitoring student progress. In addition, there is the necessity for formal reviews of planning, particularly individual educational plans, to assess whether targets have been reached, and to confirm that priority learning needs continue to be individually relevant.

7.5   SES and SEN

As was the case with our earlier Phase 1 analysis of GUI data when children were 9 years old, a strong relationship between socio-economic status (SES) and most categories of SEN was found among 13 year olds. There is also evidence of clustering of some forms of SEN in certain types of school. Although GUI data are not ideally suited to addressing the issue of clustering, the existence of such strong relationships at individual level together with the knowledge that a great deal of clustering of students from low SES backgrounds in schools such as those in DEIS indicates clustering of SEN students also occurs. Thus, it is reasonable to suggest that any new method of allocating resources to schools should take account of schools' socio-economic profiles.

There is some evidence from this study, in line with evidence from elsewhere, that having a child with special educational needs impacts on financial difficulties/financial stress. However, the implications of that evidence are not clear, since the relationship between socio-economic vulnerability and special educational needs is complex and bi-directional (Emerson & Hatton, 2007). While there is a range of financial supports available for children with special educational needs and their families,[101] many families absorb 'hidden' costs such as time off work to care for their children.

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[101]   See https://www.european-agency.org/country-information/ireland/national-overview/complete-national-overview.

There is also evidence which predicts that young people with disabilities will, in the future, attain lower education and earn less than their non-disabled peers. Cullinane (2015) has reviewed the evidence on the socio-economic and other impacts of disability on children and their families and, drawing on findings from GUI which are consistent with those presented in this report, comments that the primary carer of a child with a disability is considerably less likely to participate in the labour market compared to a primary carer of a child without a disability, and that these differences are more pronounced, the more limiting the child's disability. Parents of a child with a disability are also less likely to be educated at third level and more likely to be in the lowest social class. These households tend to have lower incomes and much greater difficulty in making ends meet.

Cullinane (2015) argues, on the basis of this and other evidence, that the presence of a child with a disability in a household is strongly correlated with worse outcomes and highlights the additional hidden or intangible costs of childhood disability to the child, their family and society: "Studies show that raising a child with a disability places complex demands upon various aspects of family functioning and may increase stress, as well as affecting family members' health and general wellbeing." He proposes a cost for disability payment, commenting that "Quite simply, current policy does not go far enough in addressing these issues."[102]

We are of the view that the issue is not simply one of cost, but also one of prioritising early, effective identification and support, and continuity in appropriate levels of support, within an overall system that is quick to detect and respond to change.

7.6   Continuity and change in outcomes for children with SEN

There has been both continuity and change in the relationship between SEN and children's outcomes between the two waves. While many of the social and wellbeing outcomes have remained stable between the ages of 9 and 13, two areas stand out where the gap has widened between children with and without special educational needs: student engagement and mathematics achievement.

With respect to engagement, the results provide strong evidence that disengagement from school starts early and worsens over time in some children. The results also suggest the importance of a smooth transition from primary to post-primary school among vulnerable children, and the interrelationships between engagement, successful transition and emotional wellbeing were confirmed in the data.

The findings with respect to mathematics achievement suggest that, in addition to a generalised disengagement from education, curricular or pedagogical factors are at play, since, broadly speaking, children with special educational needs have made good progress in reading from age 9 to 13.

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[102]   See http://frontline-ireland.com/economic-costs-disability-families/.

On a positive note, there is some indication that the emotional wellbeing of some children has improved, as indicated by a small increase in the wellbeing (Piers-Harris) scores of children with special educational needs across waves. However, these children were starting from a very low base at age 9, and their scores are still significantly lower than children without special educational needs at age 13. Also, it is evident from the Mood and Feelings Questionnaire that quite a number of children with special educational needs, particularly, children with BESD and GLDD, were experiencing very low mood at age 13. The combined evidence from both waves of GUI also suggests that some children may be more vulnerable to bullying than others, and the higher prevalence of bullying among, in particular, children with BESD, GLDD, and multiple or unclassified SEN, was apparent at both ages 9 and 13.

Taking a holistic perspective on these findings, the policy implications are that engaging children in their education needs to start early and that the transition process needs to pay equal attention to educational and social-emotional aspects of children's lives.

7.7   Reading and Mathematics

While it could be argued that children with special educational needs are holding their own in relation to reading achievement levels, the findings in relation to mathematics achievement levels give cause for concern. First, in relation to engagement, low liking of school was linked to significantly lower numeric ability scores, with dislike at primary level having an association with achievement in the subject at post-primary level.

In addition, children with special educational needs are scoring moderately lower than would be expected relative to their peers, even after accounting for their mathematics achievement at age 9 along with other background characteristics. This pattern is different to their reading achievement, where the gap did not widen over time from age 9 to 13 years. Children (in general) in Second Year had a numeric ability score that was moderately lower than children in First Year. This suggests that disengagement in Second Year may have a more negative impact on mathematics than on reading achievement levels.

There was also a significant association between mathematics performance and attendance in DEIS band 1 schools, at both primary and post-primary levels, with a child attending both likely to have a numeric ability moderately lower than their peers in other schools. This may be related to wider societal inequalities (e.g. housing) rather than differences between schools.

As outlined in the literature review, improvements in children's achievement levels in national assessments have been more prominent for literacy than mathematics and, internationally, Irish children tend to do comparatively less well on mathematics than on literacy (OECD, 2013; Perkins *et al.*, 2013). Taking the findings of the present study in relation to mathematics, as stated in Chapter 6, it is not clear whether the results are related to the changes in mathematical content from primary to post-primary, the way mathematics is taught, how students are engaged, the cumulative widening of the gap through lack of prerequisite skills and knowledge, or other factors.

These findings have significance for the review of the National Literacy and Numeracy Strategy (Department of Education and Skills, 2011). As outlined in the literature review, additional support for mathematics has been far less than that provided for literacy in schools. The findings suggest that it may be necessary for schools to rebalance support systems between literacy and mathematics in order to ensure greater engagement and achievement levels in the subject for children with special educational needs.

At post-primary level, the implementation of *Project Maths* needs to be monitored for its effect on students who experience difficulties learning the subject, including children with special educational needs. In addition, the reasons for dislike of school and the processes and practices that can counteract this certainly merit further examination.

7.8 Transition from primary to post-primary school

It is encouraging that 80% of parents of children with special educational needs agreed that their child has settled in well to post-primary school. However, this leaves 20% of children with special educational needs for whom the transition was not so positive. Moreover, data on combined scores measuring the child's transition to post-primary school revealed that children in each of the seven SEN groups have statistically significantly lower scores than children without SEN, confirming that they did not settle in as positively or as smoothly, and this was particularly the case for children with ASD, BESD and GLDD.

In the context of facilitating the transition experience, it is also encouraging that the children who took part in GUI at age 13 were attending post-primary schools which provided one or more forms of transition support for students beginning post-primary school. However, regarding any association between the six general forms of support included in the transition programmes offered by post-primary schools and the child's experience of settling in, there were no differences in parents' reports of their child settling in to post-primary school on any of these forms of support, whether the child had special educational needs or not.

In light of research evidence cited in Chapter 1 indicating the positive impact of successful negotiation of the salient features of school transition on children's adjustment, self-perceptions, perception of school, intrinsic value for school work, engagement and academic performance, and drawing on research evidence highlighting the need for targeted and tailored supports for children with SEN, transition programmes provided by the primary and post-primary schools may be required to be sufficiently flexible and appropriately specific to target individual needs for a significant minority of children with special educational needs. At the same time, continuity of the particular supports availed of and required by each student with SEN should be safeguarded, and the transition process should include supports for educational, social and emotional elements. The low rates of participation by children with special educational needs in extra-curricular activities, as well as the anxiety experienced by some of these children about Physical Education noted in the literature review, should also be taken into account in an overall consideration of the transition process for these children, given the importance of their health and overall wellbeing, and may aid their sense of belonging during their adjustment to post-primary school.

7.9   Subject choice and future educational opportunities

This study found that, although children with special educational needs were more inclined to express a dislike of school than their counterparts without special educational needs, a large majority of children with special educational needs expressed an interest in English. About one in five children with special educational needs (compared to less than one in 100 children without special educational needs) were not studying Irish.

Darmody and Smyth (2016) have analysed patterns of exemptions from studying Irish and reported a large increase since 2009 of exemption rates due to learning disabilities. They comment (p. 14) that "Not taking the Irish language at school may have implications for entry to some third-level institutions and professions in the Republic of Ireland." This, coupled with the comparatively low educational expectations of parents for their children with special educational needs which appears to have widened over time (relative to parents of children without special educational needs), indicates a real need to review post-primary subject availability for *all* children, within the context of educational equity and fairness in future educational chances.

7.10   Mental health and wellbeing, and bullying

Section 7.6 has drawn attention to the low levels of emotional wellbeing among quite high numbers of some children with special educational needs, particularly children with BESD and GLDD. This section considers the challenges associated with research findings on bullying, and makes some suggestions for future work.

First, there are different definitions of bullying in the literature (Kauffman, 2015) and the absence of an agreed understanding and framework for interpreting and researching bullying can and does lead to inconsistencies and confounding research findings (Swearer, Siebecker, Johnsen-Frericks, & Wang, 2010). For example, difficulties with labelling and/or definitions can lead researchers and teachers to either over- or under-simplify the issues and challenges involved which, in and of itself, can further complicate issues. For instance, over-emphasis on, and attention to, more overt forms of aggressive physical bullying may result in under-identification of, and neglect of, both internalised problems that sometimes act as precursors or triggers for manifestations of maladaptive, externalised, behaviours later in adolescence. Hence, there is a need to agree a working definition of the term bullying and what it encompasses in studies such as GUI. It is worthwhile taking children's, and not just researchers', perspectives, into account in such a definition (e.g. Guerin & Hennessey, 2002).

Second, the incidence of bullying reported in studies is commonly based on the frequency of bullying episodes only, without reference to either the intentionality or power differential between the bully and victim (Rose *et al.*, 2015), although there are some exceptions (e.g. Felix *et al.*, 2011). This results in a mismatch between definitions and assessments of bullying. Assuming Olweus's (1997) definition of bullying as incorporating three dimensions: repeated, uninvited, negative behaviour (frequency), that is intentionally perpetrated (intentionality), and perpetrated by someone who exerts influence or power of the victim (power imbalance), a second recommendation is that research be undertaken that focuses on and reports each dimension,

singularly and collectively. It would be worth exploring current work in this area, such as that undertaken by DCU's Anti-Bullying Centre.[103]

Third, until relatively recently, there was little research that included and/or focused specifically on students with SEN and their experiences of bullying. Hence, although research is now signalling that students with SEN, and particularly those with BESD, are at greater risk of experiencing bullying than children without SEN, further research that assumes a social and eco-systemic rather than a medical model framework could be undertaken to tease out sub-group differences and social-ecological factors.

These cautions notwithstanding, until such issues are addressed satisfactorily, the recommendations of the National Disability Authority (2014) (which includes a call for further research of this kind) regarding the need for on-going, high-quality pre- and in-career professional development for all teachers is reiterated here in addition to the other suggestions made in this report.

7.11   Implications

Findings in this report offer a starting point for consideration in preliminary policy formulation, though many require further research and analysis.

The key implications of the study may be summarised as follows:

1. This study found that many children with BESD are at a significant disadvantage socio-economically relative to their peers without special educational needs, frequently live in home environments undergoing financial stress and compositional changes, and have poor educational, social and emotional outcomes. Moreover, a significant number of girls emerged with BESD at age 13, and it was shown that BESD frequently co-occurs with other special educational needs at age 9. Despite these findings, a majority of children identified with BESD on the basis of the GUI data appear not to be in receipt of educational or psychological supports (albeit that this relies on parents' reports of supports). There is a need for the development of structures and methods to enable early identification of and support for children with BESD (or at risk of BESD). This is a challenging and complex task, however, as it will require continued and enhanced collaboration and co-ordination across sectors at local, regional and national levels. In this respect, the strategies for the development of the Children's and Young People's Services Committees as part of *Better Outcomes, Brighter Futures* are welcomed.

2. The new model of allocation (NCSE, 2014) is welcomed, with a fairer and more equitable system of allocation, with the inclusion of measures of socio-economic disadvantage.

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[103]   www.dcu.ie/abc.

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3. The wellbeing of children with special educational needs is a matter for concern, particularly children with BESD, GLDD and multiple or unclassified SEN (as defined in this study). Initiatives to address these issues may be appropriate, and within these, that the needs of vulnerable children and young people could be specifically targeted.

4. The changes over time in special educational needs underline the need for capacity in the school system to assess children's cognitive, social, personal and emotional needs in an on-going manner so as to tailor responses to meet those changing needs. Professional development and support should be on-going, and cross-sector collaboration should be maintained and enhanced.

5. There may be a need to develop targeted, tailored supports for a significant minority of children with special educational needs as they transition from primary to post-primary school. Continuity in supports should be safeguarded and the transition process should include supports for educational, social and emotional elements.

6. In some settings, subject choice and subject availability may have a negative impact on children's engagement as well as their future educational options. In particular, the availability of Irish for children with SEN who want to study it should be reviewed.

7. In attempts to address the overall wellbeing and sense of safety and belonging of children with special needs in schools, research using a standard definition of bullying is needed, and this definition should take children's views into account. The multidimensional elements of bullying and bully-perpetrator relationships should be considered.

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Appendices

Appendix 1: Composition of Advisory Committee for the Study

Clare Farrell*, NCSE

Jennifer Doran**, NCSE

Peter Archer, Chief Executive Officer, Educational Research Centre

Jude Cosgrove, formerly of the Educational Research Centre

Caroline McKeown, Research Associate, Educational Research Centre

Joe Travers, Head of School, School of Inclusive and Special Education, DCU Institute of Education

Aisling Curley, Department of Education and Skills, Special Education Section

Paddy Connolly, CEO Inclusion Ireland

Gráinne Collins, Senior Research Officer, NDA

Clive Byrne, National Association of Principals and Deputy Principals of Post Primary Schools

Elizabeth Matthews, Co-ordinator, Deaf Education Centre, Navan Road

Pól Bond, NEPS

Liam Coen, NCSE

* Chair of the Committee until October 2015
** Chair of the Committee from October 2015

Appendix 2: Development of classification scheme for special educational needs for Wave 2 of GUI

A2.1. Initial examination of information on SEN collected from parents in Wave 2

In Wave 2 (when children were age 13), the identification of children with special educational needs was based entirely on parents' reports. This is because Wave 2 did not include a teacher-on-child questionnaire (while one was used in Wave 1). The set of questions from which the classification is based is shown verbatim below. (Other parts of the parent questionnaire are referred to as relevant.)

Parents were asked:

"*Does the child have any of the following conditions or disabilities? (Indicate all that apply.)*

- *Physical disability or visual or hearing impairment*

- *Specific learning disability (e.g., dyslexia, dyscalculia, dyspraxia)*

- *General learning disabilities (Mild, Moderate, Severe/Profound)*

- *Autism spectrum disorders (e.g., Autism, Aspergers syndrome)*

- *Emotional or behavioural disorders (e.g., ADHD (attention deficit hyperactivity disorder)/ADD)*

- *Mental health difficulty*

- *Speech or language difficulty (including speech impediment)*

- *Assessed syndrome (e.g., Down Syndrome, Tourettes Syndrome)*

- *Slow progress (reasons unclear)*

- *Other*

- *None of the above.*"

For each condition, parents were also asked: *"Has this condition or disability been diagnosed by a medical professional?"* (Yes/No/Awaiting Consultation), and, if Yes, "What age was the child when this condition or disability first diagnosed?" (Age in years).

This information is summarised in Table A2.1. It acts as a *starting point* for the Wave 2 classification scheme.

Table A2.1. Numbers and percentages of children (at age 13) with various conditions or disabilities, diagnosis status, and age of diagnosis (if diagnosed)

Condition or disability	N	%	N (After adjusting physical or sensory disability)	% (After adjusting physical or sensory disability)	% Diagnosed	% Not diagnosed	% Awaiting Consultation	Mean age if diagnosed	% Diagnosed after age 9 (Wave 1)
Physical disability or visual or hearing impairment	480	6.4	92	1.2	97.0	2.4	0.7	6.81	22.1
Specific learning disability (e.g., dyslexia, dyscalculia, dyspraxia)	592	7.9	592	7.9	91.7	4.5	3.8	8.56	24.5
General learning disabilities (mild, moderate, severe/profound)	288	3.8	288	3.8	77.4	20.8	1.7	7.65	24.2
Autism spectrum disorders (e.g., Autism, Aspergers syndrome)	105	1.4	105	1.4	85.2	8.0	6.8	6.90	17.7
Emotional or behavioural disorders (e.g. ADHD (attention deficit hyperactivity disorder)/ADD)	158	2.1	158	2.1	88.9	4.7	6.3	8.00	16.7
Mental health difficulty	47	0.6	47	0.6	78.9	12.2	8.9	10.04	69.0
Speech or language difficulty (including speech impediment)	180	2.4	180	2.4	90.0	6.0	4.0	5.95	14.1
Assessed syndrome (e.g. Down Syndrome, Tourette's Syndrome)	26	0.3	26	0.3	92.6	1.5	5.9	2.01	1.8
Slow progress (reasons unclear)	177	2.4	177	2.4	54.7	39.7	5.6	8.06	22.7
Other	52	0.7	52	0.7	79.1	17.1	3.8	7.09	34.3
None	6078	80.8	6502	86.4					
Any special educational needs	1447	18.2	1023	13.6					
Total	7525	100.0	7525	100.0					

Note. The totals do not add up to the sums of the first four columns since more than one condition could be selected.

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Educational Experiences and Outcomes of Children with Special Educational Needs:
Phase 2 – from age 9 to 13 – A Secondary Analysis of Data from the Growing Up in Ireland Study

Table A2.1 shows that:

- Three-quarters of children with a condition or disability had been diagnosed at or before age 9, with two exceptions: Assessed syndromes were generally diagnosed at a young age (mean = 2 years) while mental health difficulties were identified later (mean = 10 years).

- Just over 6% of the Wave 2 sample children had a physical disability or a visual or hearing impairment (and 1.2% after an adjustment was made, which is described below).

- Almost 8% had a specific learning disability.

- About 4% had a general learning disability.

- 2–3% were identified as having emotional or behavioural disorders and a similar percentage had a speech or language difficulty, and/or slow progress (reasons unclear).

- 1.4% were identified as having Autistic Spectrum Disorders.

- Less than 1% of children fell into each of the other categories.

In the case of physical, visual or hearing difficulties, parents were not asked whether or not the condition affected the children's daily activities. The Wave 1 classification of children in this group was based on teachers' responses which specified that the condition *limited the kind or amount of activity the Study Child can do at school* (see Cosgrove *et al.*, 2014, Chapter 2). Therefore, information was taken from another question in the parent questionnaire to apply a similar criterion to Wave 2. In Wave 2, parents were asked whether their child had *any* problem, illness or disability *which hampered his or her daily activities*. Of the 480 children with a physical disability or visual or hearing impairment, 92 were identified as being hampered severely (18) or to some extent (74) in their daily activities. This brought the incidence of special educational needs due to a physical disability or visual or hearing impairment down from 6.4% to 1.2%, and the overall prevalence down from 18.2% to 13.6% (shown in columns 3 and 4 of Table A2.1). Furthermore, 36 children were identified as having multiple special educational needs in the final classification at Wave 2 (see Chapter 2), and therefore the final number of children with physical or sensory disabilities that impact on daily life is 56.

Overall, then, 13.6% of children were identified as having one or more conditions or disabilities at Wave 2 through an **initial** examination of the parent questions (after making adjustments to the physical and sensory disability category). This initial examination also showed that 10% of all children had one condition or disability, and 3.6% had more than one condition or disability. This 3.6% represents 26.5% of children identified with any condition(s) (3.6%/13.6%).

Table A2.2 shows the numbers and percentages of children at age 13 identified by their parents as having none, one, two, and three or more of the conditions shown in Table 2.1, overall and by the gender of the child. Conditions and disabilities were somewhat more prevalent in males (15.5%) than in females (11.6%).

Table A2.1 (with very small numbers in some groups) and Table A2.2 (with multiple conditions in around one in four children identified with a condition, disability or difficulty) confirm that it is necessary to combine categories in some way in order to produce a classification scheme for analysis purposes.

In Section A2.2 we consider how other information in the GUI dataset can be used in combination with this initial figure of 13.6% in order to arrive at a comprehensive estimate.

Table A2.2. Number of children's conditions or disabilities identified by parents, overall and by children's gender, at age 13

Number of conditions or disabilities (after adjusting physical or sensory disability category)	All		Males		Females	
	N	%	N	%	N	%
None	6502	86.4	3238	84.5	3264	88.4
One	752	10.0	440	11.5	312	8.5
Two	159	2.1	98	2.6	61	1.6
Three or more	113	1.5	58	1.5	55	1.5
Total	7525	100.0	3833	100.0	3692	100.0

A2.2. Limitations of the Wave 2 classification and attempts to address them

The information presented in Table A2.1 has limitations in terms of classifying special educational needs. This section identifies and describes these, proposing attempts to address them, where possible, in order to arrive at a more comprehensive and complete estimate.

First, in the case of physical, visual or hearing difficulties, we cannot separately identify those children in the data with physical, hearing and/or visual impairments. We tried to refine this category further by cross-referencing the information shown in Table A2.1 with other information on physical and sensory conditions and disabilities collected in both Waves 1 and 2, but concluded that separate categories of physical and sensory disability were not possible to establish.

However, the *Wave 1* data provide additional information on the nature of the conditions of children with physical or sensory disabilities that can, at least, be used to provide some descriptive information on this group. We identified markers of mobility, hearing and physical disabilities in the Wave 1 data and examined these by our Wave 2 identification of children with these conditions. Tables A2.3, A2.4 and A2.5 show the results of these analyses. Table A2.3 shows that, of the 92 children in Wave 2 identified as having a physical or sensory disability, about 1 in 5 (18 children) needed mobility support, most commonly a wheelchair. Across all 7525 children, 25 (just 0.3%) needed some support to move around.

Table A2.3 indicates that seven children who needed mobility supports (25–18) were *not* identified as having a physical (or sensory) disability at Wave 2.

Table A2.3. **Frequencies of various markers of mobility difficulties at age 9 – all children at age 13, and children identified as having a physical or sensory disability at age 13**

Marker of mobility difficulties at age 9	All – age 13		Children with phys/sens disabilities – age 13	
	N	%	N	%
Braces	3	0.04	2	2.2
Crutches	2	0.03	2	2.2
Wheelchair	13	0.17	13	14.1
Shoe raises	5	0.07	3	3.3
Other	9	0.12	8	8.7
Any mobility supports	25	0.33	18	19.6
No mobility supports	7500	99.7	74	80.4
Total	7525	100.0	92	100.0

Table A2.4 indicates that 25% of children with a physical or sensory disability at age 13 had some kind of hearing difficulty at age 9 (compared to about 8% of all children), most commonly requiring grommets.

Table A2.4. **Frequencies of various markers of hearing difficulties at age 9 – all children at age 13, and children identified as having a physical or sensory disability at age 13**

Marker of hearing difficulties at age 9	All – age 13		Children with phys/sens disabilities – age 13	
	N	%	N	%
Hearing aid	7	0.1	2	2.2
Grommets	367	4.9	13	14.1
Cochlear implants	2	0.0	1	1.1
Surgical procedure	28	0.4	0	0.0
Removal of wax	10	0.1	0	0.0
Medication	10	0.1	0	0.0
Other	55	0.7	5	5.4
Has difficulties, but no treatment	133	1.8	4	4.3
Any need for support with hearing	592	7.9	23	25.0
No support for hearing	6933	92.1	69	75.0
Total	7525	100.00	92	100.0

Table A2.5 indicates that about 45% of the 92 children with a physical or sensory disability at age 13 had some visual difficulties at age 9, compared to 16% of all children. The most common form of support was glasses.

Table A2.5. **Frequencies of various markers of visual difficulties at age 9 – all children at age 13, and children identified as having a physical or sensory disability at age 13**

Marker of visual difficulties at age 9	All – age 13		Children with phys/sens disabilities – age 13	
	N	%	N	%
Laser treatment	15	0.2	2	2.2
Surgical operation	74	1.0	5	5.4
Patch	330	4.4	12	13.0
Glasses	977	13.0	33	35.9
Eye drops	8	0.1	0	0.0
Eye exercises	14	0.2	3	3.3
Waiting for treatment/appointment	15	0.2	3	3.3
Other	69	0.9	8	8.7
Has difficulties, but no treatment	120	1.6	0	0.0
Any need for support with sight	1187	15.8	41	44.6
No support for sight	6338	84.2	51	55.4
Total	7525	100.0	92	100.0

It is important to note that many children in the physical or sensory disability group had more than one condition, difficulty or disability. When we examined the co-occurrence of mobility, hearing and visual difficulties among these 92 children, we found that 6.5% (6) had mobility *and* hearing issues, 9.8% (9) had mobility *and* visual difficulties, and 10.9% (10) had hearing as well as visual difficulties.

A second limitation is that there is only one category of general learning disability or difficulty (GLDD) in the questionnaire, with no indication of the level of severity of the GLDD. This disability is typically broken down into mild, moderate and severe/profound needs, as these have different educational implications, but it is not possible to identify these subgroups from the data. There may also be an overlap between children identified with general learning disabilities and with slow progress. Note, though, that slow progress may also include those with learning *difficulties* rather than with a learning *disability*. For the purposes of classification, children with general learning disabilities and slow progress were combined into a single group, noting that within this group (and indeed all other groups), there is likely to be wide variation in the strengths and needs of the children. This group is therefore called children with general learning disability or *difficulty*.

Third, some parents indicated that their child had been identified as having both a general and a specific learning difficulty.[104] For the purposes of classifying children, the specific learning difficulty is taken as the *primary* special educational need, i.e. some children in the specific learning difficulty group have also been identified as having a general learning difficulty or disability, and/or slow progress.

Fourth, a small number of children (n=47) were identified as having a mental health difficulty. In the absence of more detailed information from the questionnaire about the nature of this difficulty, it seemed appropriate to group these children with those identified as having an emotional or behavioural difficulty (n=158).[105]

Fifth, and related to the fourth point, we know from parents' responses to the Strengths and Difficulties Questionnaire (SDQ), which provides quite robust information on emotional and behavioural difficulties, that a number of children who have **not** been identified by their parents as having an emotional or behavioural difficulty and/or a mental health difficulty have SDQ scores that indicate the presence of these difficulties (see Appendix 1 of Cosgrove *et al.*, 2014). To overcome this limitation, we identified children with a score on the SDQ that fell into the clinical range; that is, scores that were at or above the 90th percentile in a British normative sample and hence statistically significantly more likely to have a psychiatric difficulty or disorder (see Goodman, 2001; Cosgrove *et al.*, 2014, Appendix 1). We then combined this information with parents' responses concerning the presence of an emotional or behavioural difficulty and/ or a mental health difficulty. The combining of this information results in 7.5% of children (565) with a behavioural, emotional or social difficulty, or BESD. That is, children with BESD in this classification scheme have one or more of: a clinical-level score on the SDQ, the presence of an emotional or behavioural difficulty, and the presence of a mental health difficulty.

Including children with BESD on the basis of the SDQ data brings the overall prevalence estimate shown in Table A2.1 from 13.6% to 17.9%.

Sixth, it is difficult to know how best to classify the 26 children with an assessed syndrome (Table A2.1); in particular, some of these children may have Down Syndrome. Of these 26, though, 7 were already classified as having general learning disabilities or difficulties. Of the remaining 19 children, ICD-10 data[106] are available for just 7 as follows: 5 with congenital malformations, deformations and chromosomal abnormalities, 1 with diseases of the musculoskeletal system, and one with 'other'. This leaves a possibility that the five children with congenital malformations, deformations and chromosomal abnormalities could be re-classified as having GLDD.

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[104] Specifically, 592 children were identified as having a specific learning disability and 288 with GLDD. Of these, 103 were identified by parents as having both.

[105] Thirteen of these 158 children were identified by parents as having *both* a mental health difficulty and an emotional or behavioural difficulty.

[106] ICD-10 stands for the International Statistical Classification of Diseases (10th Revision). It is a scheme of the World Health Organisation. The GUI parent questionnaire asked parents for information about the nature of illness, condition or difficulty of the study child, and this information was then classified by the GUI research team using the ICD-10 scheme. See http://apps.who.int/classifications/icd10/browse/2015/en for a description of the categories in the ICD-10.

However, there is not really sufficient information with which to argue that this re-classification is the most valid treatment of the data, since there is such a wide array of congenital malformations, deformations and chromosomal abnormalities. Therefore, it is possible that these five children may have Down Syndrome and have not been included in the GLDD group.

Seventh, some children were identified as having special educational needs at age 9, but were not identified as having SEN at age 13. Since many of the analyses in this report examine change and progress over time, it would be erroneous to exclude these children from the Wave 2 classification scheme when they were aged 13. Therefore, we have added another group to the Wave 2 scheme, children with special educational needs at age 9 only (667 children or 8.9% of the Wave 2 cohort), to allow for comparisons between children who had special educational needs at age 9 but not at age 13 and children who did not have special educational needs at either age. This group does not include children who were identified as having medium risk BESD at the time of the Wave 1 report. The remapping exercise undertaken as part of this report to refine the classification scheme mean that these children, that had a medium risk BESD only at age 9 and have not been classified as having another SEN, or have not reached the threshold for BESD in this report, are now classified as having no special educational needs at age 13.

Appendix 3: Additional tables

Table A3.1. Distribution of children across school type and school gender composition (including primary and special schools), by SEN group

Group	N	Girls' Sec	Boys' Sec	Co-ed Sec	Voca-tional	Comm and Comp	Primary School	Special School	Total
Children without special educational needs	5491	22.4	19.7	17.0	24.3	16.2	0.3	0.0	100.0
Children with special educational needs	1990	17.8	16.4	14.9	29.9	16.6	2.3	2.1	100.0
All children	**7481**	**21.2**	**18.9**	**16.5**	**25.8**	**16.3**	**0.8**	**0.5**	**100.0**
Of those with any SEN…									
Behavioural, emotional or social difficulties	304	18.1	14.3	16.0	35.2	15.3	1.1	0.0	100.0
General learning difficulties or disabilities	185	18.1	11.5	13.4	34.5	13.9	4.0	4.5	100.0
Specific learning difficulties or speech and language difficulties	600	22.1	14.0	13.1	28.7	17.0	3.5	1.7	100.0
Autistic Spectrum Disorders	95	7.2	27.9	13.6	17.0	20.7	1.7	12.0	100.0
Physical/sensory disabilities that impact on daily life	56	17.4	15.3	16.2	30.6	7.4	0.0	13.0	100.0
Multiple or Unclassified SEN	84	12.1	20.5	21.5	20.9	12.6	7.9	4.6	100.0
SEN at age 9 only	666	16.1	18.9	15.6	30.2	18.3	0.9	0.0	100.0

44 children (0.6%) are missing data for this question. Children not enrolled in post-primary schools (n=142) are not included in the table.

Table A3.2. Distribution of children across DEIS and non-DEIS schools, by SEN group: Children enrolled in post-primary schools

Group	N	Not in DEIS	In DEIS	Total
Children without special educational needs	5475	84.5	15.5	100.0
Children with special educational needs	1904	75.3	24.7	100.0
All children	**7383**	**82.1**	**17.9**	**100.0**
Of those with any SEN…				
Behavioural, emotional or social difficulties	301	64.9	35.1	100.0
General learning difficulties or disabilities	170	73.6	26.4	100.0
Specific learning difficulties or speech and language difficulties	569	74.6	25.4	100.0
Autistic Spectrum Disorders	82	85.8	14.2	100.0
Physical/sensory disabilities that impact on daily life	49	68.8	31.2	100.0
Multiple or Unclassified SEN	73	80.8	19.2	100.0
SEN at age 9 only	660	79.6	20.4	100.0
Children not enrolled in post-primary schools (n=142) are not included in the table.				

Table A3.3. Percentages of children in schools with various levels of literacy problems, numeracy problems, and emotional or behavioural problems, by SEN group (based on principals' estimates)

Group	Literacy problems (row totals sum to 100%)				Numeracy problems (row totals sum to 100%)				Emotional or behavioural problems (row totals sum to 100%)			
	N	<10%	10-25%	>25%	N	<10%	10-25%	>25%	N	<10%	10-25%	>25%
Children without special educational needs	5289	48.4	43.2	8.4	5271	47.3	44.3	8.3	5254	78.1	18.2	3.6
Children with special educational needs	1853	41.7	43.0	15.3	1842	39.9	44.8	15.3	1841	71.2	20.7	8.0
All children	**7142**	**46.7**	**43.2**	**10.2**	**7113**	**45.4**	**44.5**	**10.2**	**7096**	**76.3**	**18.9**	**4.8**
Of those with any SEN…												
Behavioural, emotional or social difficulties	297	36.1	40.6	23.3	297	29.7	46.1	24.2	296	68.1	19.9	11.9
General learning difficulties or disabilities	162	49.6	34.5	15.9	162	46.5	37.4	16.1	161	63.1	25.3	11.6
Specific learning difficulties or speech and language difficulties	547	33.4	52.3	14.3	545	32.8	50.8	16.4	547	70.4	21.7	7.9
Autistic Spectrum Disorders	82	55.4	38.4	6.2	82	51.1	44.4	4.4	82	77.1	22.9	0.0
Physical/sensory disabilities that impact on daily life	48	44.5	34.8	20.7	48	48.2	32.7	19.1	47	71.6	21.2	7.2
Multiple or Unclassified SEN	70	40.1	49.7	10.1	70	38.7	51.8	9.6	70	74.0	18.1	8.0
SEN age 9 only	646	47.5	38.9	13.6	638	47.0	41.1	11.9	638	74.4	19.1	6.5

241 children (3.3%) are missing data on literacy problems, 270 children (3.7%) are missing data on numeracy problems, and 287 children (3.9%) are missing data on emotional and behavioural problems. The table excludes 142 children (1.8%) not enrolled in post-primary schools.

Table A3.4. Distribution of children across schools by language of instruction, by SEN status: Children enrolled in post-primary schools

Group	N	English	Irish	Mixed	Total
Children without special educational needs	5475	93.2	3.8	3.0	100.0
Children with special educational needs	1904	93.8	3.8	2.4	100.0
All children	7383	93.4	3.8	2.9	100.0
Children not enrolled in post-primary schools (n=142) are not included in the table.					

Note. Data are weighted by the Wave 2 sample weight.

Table A3.5. Mean student-teacher ratio and total school enrolment for children in post-primary schools, by SEN status

Group	Student-teacher ratio			Total school enrolment		
	N	Mean	SD	N	Mean	SD
No SEN	4975	14.42	2.43	5475	615.01	253.79
Any SEN	1755	14.27	2.49	1904	599.70	251.11
Total	6730	14.38	2.44	7378	611.06	253.18

Children not enrolled in post-primary schools (n=142) are not included in the table. 648 children (8.8%) are missing data on student-teacher ratio. Figures shaded in grey indicate that there is a significant difference in the frequencies between children with no SEN and with SEN ($p < .05$).

Note. Data are weighted by the Wave 2 sample weight.

Table A3.6. Percentages of school principals responding 'nearly all' to four statements about parental support or involvement in the school, by SEN status (post-primary schools only)

Group	N	Think this is a good school	Show support for the school	Give children help and support with schoolwork	Attend meetings or events organised by school
Children without special educational needs	5192	95.6	76.4	40.2	42.0
Children with special educational needs	1824	92.9	76.1	36.8	39.8
All children	7016	94.9	76.3	39.3	41.4

Children not enrolled in post-primary schools (n=142) are not included in the table. The table excludes 367 children (5.0%) whose principals did not respond to questions on parental involvement or support.

Note. Data are weighted by the Wave 2 sample weight.

Table A3.7. Percentages of school principals responding 'true of nearly all' to four statements about student engagement/behaviour, by SEN status (post-primary schools only)

Group	N	Enjoy being in school	Are well-behaved in class	Show respect for teachers	Are rewarding to work with
Children without special educational needs	5276	86.1	88.0	92.0	88.1
Children with special educational needs	1844	81.9	83.8	89.5	84.5
All children	7120	85.0	87.0	91.3	87.2

Children not enrolled in post-primary schools (n=142) are not included in the table. The table excludes 263 children (3.6%) whose principals did not respond to questions on student engagement and behaviour.

Note. Data are weighted by the Wave 2 sample weight.

Table A3.8. Parents' reasons for rarely or never helping with homework, by SEN group

Group	N	Help not needed	Unable to help	Child does not want help	Someone else helps	Total
Children without special educational needs	2158	83.8	2.0	11.5	2.7	100.0
Children with special educational needs	616	62.7	4.9	24.7	7.6	100.0
All children	**2774**	**79.1**	**2.7**	**14.4**	**3.8**	**100.0**
Of those with any SEN…						
Behavioural, emotional or social difficulties	106	51.2	9.9	30.3	8.5	100.0
General learning difficulties or disabilities	40	39.8	19.7	19.0	21.5	100.0
Specific learning difficulties or speech and language difficulties	156	60.9	3.7	29.7	5.8	100.0
Autistic Spectrum Disorders	29	61.9	4.8	27.7	5.6	100.0
Physical/sensory disabilities that impact on daily life	24	83.5	0.0	4.2	6.9	100.0
Multiple or Unclassified SEN	31	62.2	0.0	28.9	8.9	100.0
SEN Age 9 only	231	71.3	2.2	20.4	6.2	100.0

The table excludes 4751 children (63.1%) whose parents did not respond to the question on help with homework, or whose parents help with homework always, regularly, or now and again.

Note. Data are weighted by the Wave 2 sample weight.

$\chi^2 = 236.058$, df = 21, $p < .001$

Table A3.9. Mean verbal reasoning, numeric ability and socio-economic index (SEI) scores of children who did and did not take part in GUI at Age 13, by SEN status

Verbal reasoning score	Not in Wave 2		In Wave 2	
	Mean	SD	Mean	SD
No special educational need(s)	99.21	13.48	**103.64**	13.54
Any special educational needs	88.73	14.50	**92.37**	15.53
All children	95.66	14.69	**100.69**	14.96
Numeric ability score	Not in Wave 2		In Wave 2	
	Mean	SD	Mean	SD
No special educational need(s)	99.21	13.31	**103.64**	13.97
Any special educational needs	88.99	14.58	**92.37**	15.00
All children	95.76	14.57	**100.67**	14.96
SEI score	Not in Wave 2		In Wave 2	
	Mean	SD	Mean	SD
No special educational need(s)	48.47	10.10	**51.15**	9.86
Any special educational needs	46.07	9.55	**48.12**	9.90
All children	47.68	9.98	**50.36**	9.95
Piers-Harris score	Not in Wave 2		In Wave 2	
	Mean	SD	Mean	SD
No special educational need(s)	51.25	8.69	**51.43**	9.32
Any special educational needs	44.99	10.61	**46.37**	10.99
All children	49.20	9.81	**50.13**	10.03

Across all children, verbal reasoning and numeric ability scores have a mean of 100 and standard deviation of 15; SEI and Piers-Harris scores have a mean of 50 and a standard deviation of 10. Figures in bold indicate that the Wave 2 score is statistically significantly different to the Wave 1 score ($p < .01$).

Table A3.10. Results of linear regressions with number of days absent at Age 13 for each SEN group compared to the no-SEN group, before and after accounting for days absent at Age 9

[Reference group: Children with no SEN]	Before accounting for Age 9 absences	SE	After accounting for Age 9 absences	SE
Behavioural, emotional or social difficulties	**2.081**	.311	**1.891**	.296
General learning difficulties or disabilities	**1.927**	.399	**1.718**	.380
Specific learning difficulties or speech and language difficulties	**1.441**	.228	**1.238**	.217
Autistic Spectrum Disorders	**1.553**	.511	**1.305**	.489
Physical/sensory disabilities that impact on daily life	**1.841**	.702	1.482	.669
Multiple or Unclassified SEN	**2.372**	.554	**1.650**	.530
SEN Age 9 only	**0.944**	.215	**0.737**	.206
Days absent at Age 9			**0.314**	.011
R²	.017		.111	

Estimates in bold indicate a statistically significant difference (p < .01). Estimates in grey indicate a statistically significant difference (p < .05).

Table A3.11. Results of linear regressions with wellbeing total score at Age 13 for each SEN group compared to the no-SEN group, before and after accounting for Piers-Harris total score at Age 9

[Reference group: Children with no SEN]	Before accounting for Age 9 P-H score	SE	After accounting for Age 9 P-H score	SE
Behavioural, emotional or social difficulties	**-6.442**	.133	**-5.176**	.507
General learning difficulties or disabilities	**-4.740**	.591	**-3.172**	.635
Specific learning difficulties or speech and language difficulties	**-2.626**	.755	**-1.101**	.369
Autistic Spectrum Disorders	**-4.423**	.428	**-3.415**	.936
Physical/sensory disabilities that impact on daily life	**-4.066**	1.049	**-3.336**	1.134
Multiple or Unclassified SEN	**-4.552**	1.362	**-2.905**	.966
SEN Age 9 only	**-2.720**	1.065	**-1.599**	.353
Piers-Harris score at Age 9			**.275**	.011
R²	.042		.113	

Estimates in bold indicate a statistically significant difference (p < .01).

Table A3.12. **Results of logistic regressions of being bullied at Age 13 for each SEN group compared to the no-SEN group, before and after accounting for being bullied at Age 9: parents' reports**

[Reference group: Children with no SEN]	Odds ratio (before adjusting for being bullied at Age 9)	SE	Odds ratio (after adjusting for being bullied at Age 9)	SE
Behavioural, emotional or social difficulties	**6.361**	.131	**4.778**	.136
General learning difficulties or disabilities	**4.068**	.178	**3.308**	.183
Specific learning difficulties or speech and language difficulties	**2.189**	.126	**1.865**	.128
Autistic Spectrum Disorders	**4.778**	.226	**3.520**	.233
Physical/sensory disabilities that impact on daily life	1.122	.489	.944	.494
Multiple or Unclassified SEN	**6.142**	.224	**4.857**	.231
SEN Age 9 only	**1.468**	.137	1.306	.139
Bullied at Age 9			**2.764**	.081
Nagelkerke R^2	.075		.115	

Estimates in bold indicate a statistically significant difference (p < .01).

Table A3.13. **Results of linear regressions with number of close friends at Age 9 for each SEN group compared to the no-SEN group, before and after accounting for number of close friends at Age 9**

[Reference group: Children with no SEN]	Before accounting for number of close friends at Age 9	SE	After accounting for number of close friends at Age 9	SE
Behavioural, emotional or social difficulties	**-1.166**	.135	**-.871**	.131
General learning difficulties or disabilities	**-1.015**	.172	**-.929**	.166
Specific learning difficulties or speech and language difficulties	-.221	.099	-.049	.096
Autistic Spectrum Disorders	**-1.898**	.229	**-1.440**	.222
Physical/sensory disabilities that impact on daily life	.029	.309	.282	.298
Multiple or Unclassified SEN	**-.908**	.238	**-.769**	.230
SEN Age 9 only	.177	.094	.188	.092
Number of close friends at Age 9			**.284**	.012
R^2	.024		.091	

Estimates in bold indicate a statistically significant difference (p < .01).

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Table A3.14. Results of linear regressions of verbal reasoning test score at Age 13 for each SEN group compared to the no-SEN group, before and after accounting for reading test score at Age 9

[Reference group: Children with no SEN]	Before accounting for reading score at Age 9	SE	After accounting for reading score at Age 9	SE
Behavioural, emotional or social difficulties	**-8.015**	.889	**-3.742**	.709
General learning difficulties or disabilities	**-17.033**	1.137	**-4.728**	.926
Specific learning difficulties or speech and language difficulties	**-11.734**	.640	-1.104	.535
Autistic Spectrum Disorders	-3.635	1.720	-0.877	1.353
Physical/sensory disabilities that impact on daily life	-1.714	2.125	-1.037	1.682
Multiple or Unclassified SEN	**-5.033**	1.682	-1.041	1.322
SEN Age 9 only	**-8.341**	0.611	**-1.490**	.489
Reading score at Age 9			**0.644**	.010
R²	.090		.447	

Estimates in bold indicate a statistically significant difference (p < .01).

Table A3.15. Results of linear regressions of numeric ability test score at Age 13 for each SEN group compared to the no-SEN group, before and after accounting for mathematics test score at Age 9

[Reference group: Children with no SEN]	Before accounting for mathematics score at Age 9	SE	After accounting for mathematics score at Age 9	SE
Behavioural, emotional or social difficulties	**-8.697**	.904	**-3.723**	.782
General learning difficulties or disabilities	**-17.234**	1.158	**-8.367**	1.008
Specific learning difficulties or speech and language difficulties	**-11.005**	.652	**-4.670**	.575
Autistic Spectrum Disorders	**-6.905**	1.723	-2.441	1.483
Physical/sensory disabilities that impact on daily life	-2.798	2.126	-1.879	1.827
Multiple or Unclassified SEN	**-5.105**	1.699	-1.091	1.459
SEN Age 9 only	**-8.774**	.612	**-4.059**	.534
Reading score at Age 9			**.519**	.010
R²	.088		.331	

Estimates in bold indicate a statistically significant difference (p < .01).

Table A3.16. Results of linear regressions of parental educational expectations at Age 13 for each SEN group compared to the no-SEN group, before and after accounting for parental educational expectations at Age 9

[Reference group: Children with no SEN]	Before accounting for parental educational expectations at Age 9	SE	After accounting for parental educational expectations at Age 9	SE
Behavioural, emotional or social difficulties	**-1.839**	.159	**-1.262**	.145
General learning difficulties or disabilities	**-3.475**	.199	**-2.456**	.182
Specific learning difficulties or speech and language difficulties	**-2.021**	.116	**-1.330**	.106
Autistic Spectrum Disorders	**-1.490**	.300	**-.876**	.271
Physical/sensory disabilities that impact on daily life	-.529	.366	-.336	.331
Multiple or Unclassified SEN	**-1.110**	.291	**-.831**	.263
SEN Age 9 only	**-1.411**	.110	**-.930**	.100
Parental educational expectations at Age 9			**.400**	.010
R^2	.096		.331	

Estimates in bold indicate a statistically significant difference (p < .01).

Table A3.17. Demographic and socio-economic characteristics of children with no SEN at either Age 9 or 13, SEN at Age 9 only, SEN at Age 13 only, and SEN at both Age 9 and 13

Characteristic	No SEN at either age	SEN age 9 only	SEN age 13 only	SEN ages 9 and 13	All children
N	5144	584	443	646	6817
Gender					
Female	53.1	45.1	50.5	40.3	51.4
Male	46.9	54.9	49.5	59.7	48.6
Total	100.0	100.0	100.0	100.0	100.0
Year Level					
First Year	47.8	48.3	50.5	53.3	48.5
Second Year	52.2	51.7	49.5	46.7	51.5
Total	100.0	100.0	100.0	100.0	100.0

Characteristic	No SEN at either age	SEN age 9 only	SEN age 13 only	SEN ages 9 and 13	All children
Household composition					
Two parents at both waves	80.9	69.0	70.8	69.4	78.1
One parent at both waves	12.8	19.3	17.7	17.6	14.1
One parent age 9, two parents age 13	2.7	3.6	4.9	4.7	3.1
Two parents age 9, one parent age 13	3.6	8.1	6.6	8.3	4.6
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Parental Education (in years)					
Mean	15.7	**14.3**	**14.6**	**14.9**	15.4
SD	3.7	3.4	3.5	3.7	3.7
% of income from social welfare					
Mean	19.1	**26.4**	**31.4**	**29.7**	21.5
SD	29.7	34.8	36.9	35.3	31.5
Primary school DEIS Status					
Urban Band 1	6.5	9.6	17.3	8.3	7.6
Urban Band 2	4.9	8.0	8.2	7.2	5.6
Rural	3.9	4.8	2.3	4.2	3.9
Not in DEIS	84.8	77.6	72.2	80.3	82.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
School sector					
Girls' secondary	24.9	18.8	24.4	19.1	21.8
Boys' secondary	20.0	20.0	16.9	19.9	19.2
Co-ed secondary	17.2	17.0	18.5	15.6	16.6
ETB	22.7	28.7	23.5	28.8	26.1
Community and Comprehensive	15.1	15.6	16.7	16.5	16.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Post-primary school DEIS status					
Not in DEIS	88.3	83.4	80.8	80.5	82.6
In DEIS	11.7	16.6	19.2	19.5	17.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Differences marked in bold indicate that the mean for that group is statistically significantly different from the no-SEN group (p < .01). Variations in the distribution of children across all categorical characteristics examined are statistically significant (p < .001), except for year level (p = .083).

Table A3.18. **Wellbeing scores by gender and SEN group (interaction from Model 3 in Table 6.3)**

SEN group	Girls	Boys	Difference (boys-girls)
No SEN either age	51.6	54.2	2.6
SEN Age 9 only	48.2	53.0	4.8
SEN Age 13 only	48.2	52.7	4.5
SEN Ages 9 and 13	49.9	50.1	0.2

Table A3.19. **Verbal reasoning scores by gender and SEN group (interaction from Model 3 in Table 6.5)**

SEN group	Girls	Boys	Difference (boys-girls)
No SEN either age	101.2	104.7	3.5
SEN Age 9 only	99.8	104.0	4.3
SEN Age 13 only	99.9	103.0	3.1
SEN Ages 9 and 13	97.7	103.8	6.1

Table A3.20. **Verbal reasoning scores by gender and SEN group (interaction from Model 3 in Table 6.5, assuming no gender differences on the verbal reasoning test)**

Group	Girls	Boys	Difference (boys-girls)
No SEN either age	101.2	101.2	0.0
SEN Age 9 only	99.8	100.5	0.8
SEN Age 13 only	99.9	99.5	-0.4
SEN Ages 9 and 13	97.7	100.3	2.6