

Learning in Focus

The Primary Classroom: Insights from the Growing Up in Ireland Study

Selina McCoy, Emer Smyth and Joanne Banks



THE PRIMARY CLASSROOM: INSIGHTS FROM THE GROWING UP IN IRELAND STUDY

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Abbreviations

DEIS	Delivering Equality of Opportunity in Schools
DES	Department of Education and Skills
EBD	Emotional behavioural difficulty
EPSEN	Education for Persons with Special Educational Needs
ESRI	Economic and Social Research Institute
NCCA	National Council for Curriculum and Assessment
NCSE	National Council for Special Education
OECD	Organisation for Economic Co-operation and Development
PDST	Professional Development Service for Teachers
PE	Physical Education
PIRLS	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
RE	Religious Education
SEN	Special educational needs
SESE	Social, Environmental and Scientific Education
SPHE	Social, Personal and Health Education
TIMSS	Trends in International Mathematics and Science Study

Executive Summary

The *Growing Up in Ireland* study provides a unique opportunity to examine the school and classroom experiences of primary school children, placing these experiences in the context of very detailed information from school principals and classroom teachers. This report draws on the first wave of the *Growing Up in Ireland* study, examining the lives and experiences of one-in-seven 9-year-old children in Ireland. Combining detailed information from parents, school principals and teachers, as well as, crucially, children themselves, this report addresses a number of important themes in Irish primary education. These include the allocation of time to different subject areas, the approaches and strategies teachers adopt in teaching 9-year-olds, and children's engagement in school.

The Primary School Curriculum (Government of Ireland, 1999) presented a strong vision of child-centred education, with children viewed as active agents in their own learning. To what extent is this vision matched by the reality? Findings in this report provide systematic evidence that whole-class teaching continues to be the dominant approach used in primary education, with much less use of active learning methods (such as group-work) than had been envisaged in the original curriculum document. The current study not only provides systematic information on the teaching methods used but also explores the way in which access to more active learning methods varies by teacher characteristics and classroom setting. Variation by teacher experience suggests that initial teacher education for more recent education graduates has contributed to the greater use of active methodologies in the classroom. Less use of such methods among more experienced teachers suggests that continuous professional development in support of the Primary Curriculum has not led to a change in pedagogical approaches among this group. More active methods are much less prevalent in larger classes, indicating the constraints of class size on the effective implementation of the primary curriculum. It is of policy concern too that some groups of children have greater access than other groups to the kinds of active methods which may engage them in learning. Thus, girls, those attending fee-paying schools, those attending *gaelscoileanna* and those in non-disadvantaged schools are more likely to experience active learning in their classroom than boys, those in English-medium schools and those in disadvantaged (DEIS) schools. The reasons for such differences are unclear from the data available here, but may reflect group-work and pair-work being seen as 'easier' to manage with more engaged groups of students.

The Primary Curriculum (1999) emphasises flexibility at the school and classroom level for teachers to address the needs of their students. While such flexibility is crucial for effective teaching and learning, there is potential for differences to

emerge which may negatively impact on longer term educational outcomes. In the longer term, this may translate into differences in student engagement and achievement in particular domains. For example, the findings point to significant variation in the time allocated to particular subject areas. Between-school differences in the time allocated to subjects may be as much as two hours a week, meaning that some students have over 18 full days less instruction than others in subjects such as Mathematics. Differences in time allocation are evident between schools and among individual teachers working in the same school. In some cases, teachers appear to adjust their timetable to reflect the mix of students in the school, with marked differences found between DEIS (disadvantaged) and non-DEIS schools, and between single-sex and coeducational schools. Timetabling variation is also found to reflect teachers' own characteristics, with more experienced teachers much more likely to emphasise a 'core' curriculum, spending greater amounts of time on English, Irish and Mathematics.

Finally, the results show generally high levels of engagement with school among Irish 9-year-olds. For the most part, children like school, look forward to coming to school and like their teachers. However, it is of policy concern that even at this early stage boys are more likely to be disengaged from school and to be more negative about literacy-based subjects than girls. Even more striking are the significant disengagement levels found among children with special educational needs, raising issues for policies around inclusion at primary level. The findings also point to the emergence of more negative attitudes to Irish than to Reading and Mathematics among children, even at this early stage.

In sum, this report provides valuable insights into the way in which the Primary Curriculum is implemented in the classroom. It has important implications for the Department of Education and Skills *Literacy and Numeracy for Life* strategy, published in 2011; for teacher education programmes; for the DEIS programme; for curricular and school organisation policy; and for policy on the inclusion of students with special educational needs.

Chapter 1

Introduction and Methodology

1.1 INTRODUCTION

It is now more than a decade since the introduction of the Primary School Curriculum (Government of Ireland, 1999; henceforth 'Primary Curriculum'). Two review reports by the NCCA (2005; 2008) indicate that teachers report that the curriculum has had a positive impact on aspects of children's learning. However, many teachers report challenges in covering the entire curriculum in the time available and in providing differentiated learning opportunities within the context of larger classes. Furthermore, whole-class teaching appears to be the dominant mode for most of the subject areas examined. While the NCCA review reports provide extremely useful insights into the implementation of the primary curriculum, there has been an absence of nationally representative data on teaching and learning within primary classrooms from both the teacher and student perspective. In particular, there has been a lack of research on the impact of specific features of the Irish system, such as the prevalence of multi-grade teaching, the persistence of single-sex schooling and significant variation in the size of classes. This study aims to address this gap in knowledge, using data from a large sample of primary school children and their teachers drawn from the *Growing Up in Ireland* study.

An advantage of the database is that it collects very rich information on teaching and learning within the primary classroom. This study addresses three sets of questions:

- How do teachers allocate time between the different subject areas of the primary curriculum? Does the allocation of time vary across different types of schools and/or across individual teachers?
- What are the most frequent teaching methods used in primary classrooms? Do the teaching methods used vary across different types of schools and/or by teacher characteristics?
- What are children's attitudes to school, their teachers and individual subjects? Do their attitudes to subjects vary by the time allocated to these subject areas? Do their attitudes to school vary by the type of teaching methods used?

These questions are addressed in Chapters 2 to 4 of the report. The remainder of this chapter places the current study in context and provides information on the *Growing Up in Ireland* study.

1.1.1 The Primary Curriculum in Context

The Primary Curriculum (1971) was seen as a shift to a new, child-centred approach within Irish education. However, concerns were raised about the extent to which this philosophy was fully reflected in classroom practice (see, for example, Sugrue, 1997). The process of revising the curriculum was initiated with the Report of the Review Body on the Primary Curriculum (1990), with these recommendations and subsequent extensive consultations with stakeholders culminating in the publication of the revised curriculum in 1999 (Government of Ireland, 1999). The new curriculum was seen as incorporating the key principles of the 1971 curriculum while also taking account of current educational thinking and wider societal change. The three key aims of the curriculum were:

- to enable the child to live a full life as a child and to realise his or her potential as a unique individual;
- to enable the child to develop as a social being through living and cooperating with others and so contribute to the good of society;
- to prepare the child for further education and lifelong learning (Government of Ireland, 1999, p. 7).

From this perspective, the child is seen as an active agent in their own learning, in keeping with constructivist philosophy which regards education as a process in which the child constructs knowledge in interaction with others (see Muijs and Reynolds, 2011).

The general aim was to provide children with a broad and balanced curriculum, comprised of six subject areas: language, comprising of English and Irish; Mathematics; Social, Environmental and Scientific Education (SESE), comprising of History, Geography and Science; Arts Education, including Visual Arts, Music and Drama; Physical Education; and Social, Personal and Health Education. The curriculum for Religious Education is the responsibility of the relevant school patron. The curriculum document strongly emphasised the importance of school and classroom planning in effective curriculum implementation. Guidelines for teachers on the different subject areas explicitly refer to constructivist approaches, emphasising the importance of using ‘hands-on’ activities and peer learning (child-child discussion).

Although the 1999 Primary Curriculum represented a significant milestone in the development of primary education in Ireland, relatively little empirical evidence is available on how this curriculum has been implemented. Review reports by the NCCA (2005; 2008) explored teacher perspectives on curriculum implementation. In spite of the guidelines’ emphasis on the use of more active teaching and learning methods, whole-class teaching was found to be the dominant approach used in many subject areas. Teachers pointed to a number of challenges, including the lack of time and availability of appropriate assessment tools. They

also reported difficulties in catering for the range of student abilities, most notably, in the area of Mathematics. Variation was evident in the integration of ICT into day-to-day teaching and learning and less integrated (cross-curricular) work was evident than had been anticipated in the original curriculum documents.

Two studies have explored the implementation of the primary curriculum in infant classes. Based on research in senior infant classes, Murphy (2004) points to less use of play, particularly more intellectually stimulating play, than had been envisaged in the original curriculum documents. Work on numeracy development and on fostering writing skills was also found to be 'traditional' rather than interactive in nature. Overall, senior infant classrooms were found to be teacher-centred, with whole-class teaching representing the dominant approach used. In a study of Mathematics teaching in infant classes, Dunphy (2009) pointed to a lack of confidence among teachers in using group-work with younger children and indicated the strong role of the textbook, or workbooks, in structuring work on numeracy development. Class size and lack of time were also mentioned as potential constraints on successful curriculum implementation. Research by Darmody et al. (2010) points to the potential for school design to facilitate the effective implementation of the primary curriculum, indicating potential constraints in many current primary settings, including class size, classroom size and layout, and the lack of outdoor space.

In the absence of a large body of research on the implementation of the primary curriculum, it is therefore timely to use a very rich data source, the *Growing Up in Ireland* study, to explore practices and processes in primary classrooms. The following section outlines the background to this study.

1.2 METHODOLOGY

The data for this report come from the first wave of *Growing Up in Ireland*—the National Longitudinal Study of Children in Ireland, a nationally representative study of children living in Ireland. It will extend over a seven year period and will track the progress of two cohorts of children at two time points. Between September 2007 and May 2008, *Growing Up in Ireland* interviewed 8,578 nine-year-old children, their parents and their teachers about a wide range of issues and the results presented here are from this wave of data collection. The underlying framework of the *Growing Up in Ireland* study emphasises children's connectedness to the world in which they live. It draws on Bronfenbrenner's perspective (Bronfenbrenner, 1979; Bronfenbrenner et al., 2006) which emphasises the importance of considering the multifaceted and multilayered nature of the influences on development over the life course.

1.2.1 The Sample

The sample design for the 9-year-old cohort in *Growing Up in Ireland* was based on a two-stage selection process in which the school was the primary sampling unit with the children within school being the secondary units. Using a sample design based on the primary school system had a number of advantages: it provided an almost complete frame of 9-year-old children in Ireland;¹ it allowed for direct access to the children's principal and teachers (who were key study informants); and it facilitated the self-completion of academic assessment tests in a group setting. A random sample of 857 schools was recruited and an interviewer was assigned to each school to meet with the principal to explain the objectives and procedures of the study. In schools which had 40 or fewer 9-year-old children, all children were included into the sample; in schools with more than 40 children, a random sample of 40 children was taken for inclusion in the sample. Information packs, including consent forms, were sent home with all selected children to give to their parent/guardian. These provided the children and their parents/guardians with information leaflets to allow them to make an informed decision on whether or not to participate in the study. Parents/guardians were asked to return completed consent forms (one each for a parent/guardian and child) to the school. The completed forms were then collected by the interviewer and returned to the Study Team. These forms contained the address and contact details of the family, which were then used to make direct contact with the family and arrange interviews. The total sample size achieved was 8,578.

1.2.2 Fieldwork in the School

There were two main components to the fieldwork: school-based and household-based. School-based fieldwork involved a self-completion questionnaire for the school principal and two self-completion questionnaires for the child's teacher. The principal's questionnaire recorded details on school characteristics including size, challenges, ethos etc., along with some personal details about the principal. The teacher-on-self questionnaire recorded class-level details such as class size, curriculum, teaching methods etc. and some personal details about teachers themselves. The teacher-on-child questionnaire recorded child-level details on the child's temperament, academic performance, school preparedness and peer relationships. Teachers were asked to complete one teacher-on-child questionnaire for each sample child that they taught. The final parts of the school-based fieldwork were the academic assessment tests and a short self-concept questionnaire that all children were asked to complete in a group setting facilitated by an interviewer.

¹ Potential exclusions are children who are home-schooled and also children who are in residential care; the numbers in both of these groups are very small.

1.2.3 Fieldwork in the Home

The informants in the household-based component of the fieldwork were the 9-year-old child, their primary caregiver (defined as the person who provides most care to the child—in most cases, the child's mother) and, if resident in the household, the spouse/partner of the child's primary caregiver (usually, but not always, the child's father). The main interviews were completed on a CAPI (Computer Assisted Personal Interview) basis and there was also a self-complete paper-based module for all respondents, which included some potentially sensitive questions. This multi-informant model gives very rich information from a number of sources. A particular strength of this model is that information is recorded on the children themselves from their own perspective. Children were consulted at all stages throughout the instrumentation design process to aid in the development of 'child-friendly' questionnaires in order to ensure good quality information from the children. At the school level, a response rate of 80 per cent was achieved. At the level of the household (i.e. eligible child selected within the school), a total of 59 per cent of target families participated in the study. The completed sample was highly representative of the population at the level of school characteristics such as county, designated disadvantaged status, categorical size of the school (measured in terms of number of 9-year-olds in the school) and gender mix of the school. The sample was slightly over-represented in terms of larger schools and also disadvantaged status. At the family level, the sample somewhat under-represents children from lower social class categories and those whose mothers had lower levels of educational attainment. These issues were addressed in a two-phased re-weighting of the data to reflect school characteristics as well as individual/family characteristics. The main external controls were extracted from administrative data provided by the Irish Department of Education and Skills in respect of the school-based characteristics, the Irish Census of Population 2006 and the European Union Survey of Income and Living Conditions (EU-SILC) in respect of individual/family-based characteristics. This ensures that the data are representative of the population of all 9-year-olds resident in Ireland at the time of the survey.²

The *Growing Up in Ireland* study represents a very rich source of data for examining practices and processes within primary classrooms. Very detailed information on teacher characteristics, teaching methods and school characteristics allow us to explore the extent to which teaching and learning processes vary across different settings. For the first time too, the perspective of primary school children is placed at the centre of the information collected, allowing us to explore their own attitudes to school and to school subjects.

This report addresses three central themes in Irish primary education. The first is focused on the allocation of time to different subject areas, which is addressed in

² Further details of the study can be found in Murray et al. (2011).

Chapter 2. The second (in Chapter 3) considers the approaches and strategies teachers adopt in teaching 9-year-old children, while in Chapter 4 the final theme considers children’s engagement in school.

Chapter 2

Time Allocation to Different Subject Areas

2.1 INTRODUCTION

There has been a good deal of debate internationally about the amount of time devoted to formal schooling and its effects on child outcomes. In 1963, Carroll proposed that students who spend more time engaged at the appropriate level of challenge on curriculum tasks would have higher achievement levels than those who spent less time. Later empirical research in the United States indicated the further importance of distinguishing between 'allocated time', timetabled periods, and 'academic learning time', the amount of time in which students are working 'on task' at an appropriate level of difficulty (Rosenshine, 1980). Extended academic learning time appears to be particularly influential in schools serving more disadvantaged populations (Smith et al., 2005). Reduced time devoted to learning has been found to allow teachers to 'cover' the material but without facilitating deeper understanding on the part of students (Clark and Linn, 2003). A reduced primary school year in Germany was found to result in a greater degree of grade repetition and fewer students continuing to the more academic secondary tracks (Pischke, 2007). A longer school day or extended school year have therefore been advanced as potential policy levers to raise student achievement (AERA, 2007).

The total amount of time devoted to formal schooling has been found to vary significantly across countries (OECD, 2010). Total compulsory time for Irish students aged 9 to 11 is estimated at 941 hours per year, significantly above the EU19 and OECD averages of just over 800 hours per year. Studies of variation within national systems have been supplemented by research which has sought to explore whether international variation in the length of the school day (or year) is associated with achievement differentials in international tests. These studies generally showed no significant relationship between overall instruction time and average test scores at the country level (Lee and Barro, 2001; Wößmann, 2003).

Somewhat less attention has been devoted to the amount of time spent on different subject areas within the school day. One American study found that primary school teachers spent about two-thirds of their time on the core academic subjects. Of this time, fifty per cent was spent on English/Reading, 25 per cent on Mathematics and 13 per cent each on Social Studies and Science (Perie et al., 1997). This study revealed very little variation in time allocation across different groups of schools and teachers. However, as students advanced through the year groups, less time was devoted to English and more time was spent on Social Studies and Science (Perie et al., 1997). OECD data (2010) indicate

variation across countries in the amount of time devoted to various subject areas. Irish students aged 9 to 11 spend comparatively more intended instruction time on reading/writing and on Religion and less time on Mathematics and PE than those in many other countries (OECD, 2010). However, it should be noted that these patterns are based on the amount of time specified in guidelines rather than empirical research on actual time spent. In contrast to the lack of effects on average test scores cross-nationally, Lavy (2010) found a significant relationship across countries taking part in the PISA study (which covers 15-year-olds) between the time spent on the language of instruction, Mathematics, Science, and test scores in those subjects. These effects were stronger for Mathematics and Science than for language, reflecting the more important role of school-based learning in these subjects (see Mortimore et al., 1988).

As outlined in Chapter One, the primary school curriculum in Ireland is made up of six subject areas comprising eleven subjects.³ The minimum number of teaching days per school year and the minimum length of a school day are specified by Department of Education and Skills circular (DES, 1995). From first class onwards, a minimum of 4 hours 10 minutes per day should be devoted to ‘secular instruction’ with 30 minutes per day spent on ‘religious instruction’. The Curriculum document specifies guidelines for the time spent on subjects other than RE but these are not mandatory (see Table 2.1). The *Literacy and Numeracy for Life* strategy document (2011) indicates that schools will be required to increase the amount of time spent on literacy and numeracy to 90 minutes and 50 minutes per day respectively. The implications for the classroom timetable will very much depend on how narrowly ‘literacy’ and ‘numeracy’ are interpreted within the broader curriculum. If they are taken, in the narrow sense, to mean the language of instruction (English/Irish) and Mathematics, the time allocation for these subjects would increase to 7.5 hours and 4.2 hours per week respectively. At the time of writing, new guidelines are being drafted which take account of the literacy and numeracy strategy.

Table 2.1: Weekly minimum time framework suggested in the Primary Curriculum (1999)

Subject area	Time
Language of instruction	4 hours
Second language (Irish/English)	3 hours 30 minutes
Mathematics	3 hours
Social Environmental and Science Education (SESE - History, Geography, Science)	3 hours
Social, Personal and Health Education (SPHE)	30 minutes
Physical Education (PE)	1 hour
Arts education (Visual arts, Music, Drama)	3 hours
Discretionary curriculum time	2 hours

Little is known, however, about the actual amount of time devoted to different subject areas within primary classrooms. This is all the more important given that many teachers have highlighted the ‘over-crowded’ nature of the curriculum. In

³ The curriculum for Religious Education is the responsibility of the relevant Church/School Authority.

this context, what subjects ‘lose out’ when time is constrained? The remainder of this chapter draws on *Growing Up in Ireland* data to address the gap in knowledge regarding time allocation. Section 2.2 outlines the time devoted to different subject areas and examines whether time allocation differs across different types of schools and/or teachers. Section 2.3 looks at the way in which teachers combine time spent on subjects in particular ‘clusters’ while Section 2.4 concludes.

2.2 TIME ALLOCATION TO SUBJECT AREAS

2.2.1 General Time Allocation Patterns

Figure 2.1 indicates the average weekly time allocated to subject areas for classrooms in which 9-year-olds are taught. More time is devoted to English than to other subjects, with over four hours per week spent on this subject. Considerable amounts of time are also spent on Mathematics and Irish, at 3.7 hours and 3.6 hours per week respectively. Among the other subject areas, the greatest amount of time is spent on Religious Education (RE), averaging just over two hours per week. Generally an average of one hour per week is spent on each of the other subjects, with slightly less than an hour being spent on Drama and SPHE.

Figure 2.1: Average weekly time allocation to subject areas

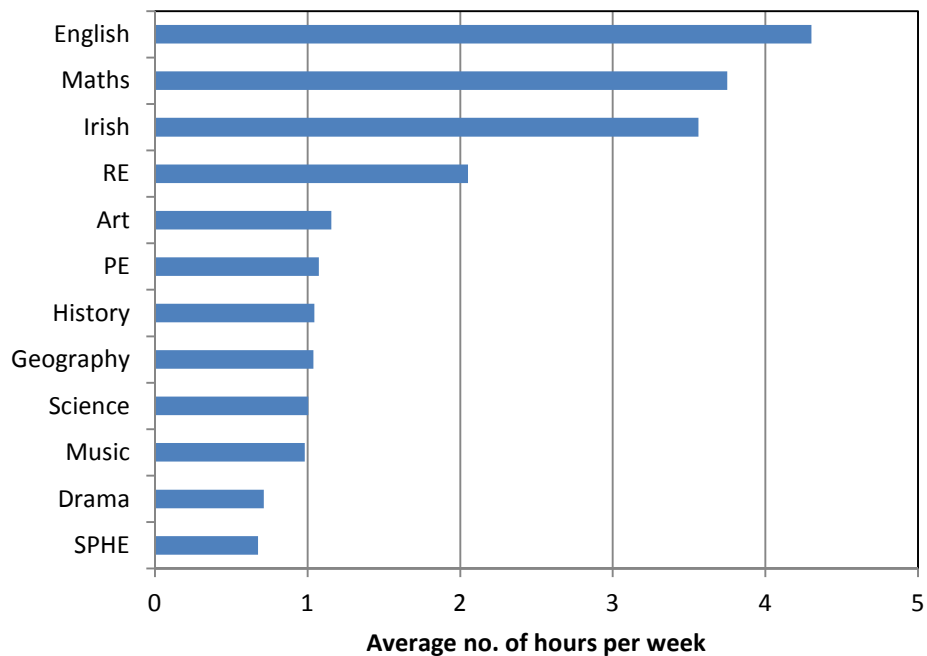
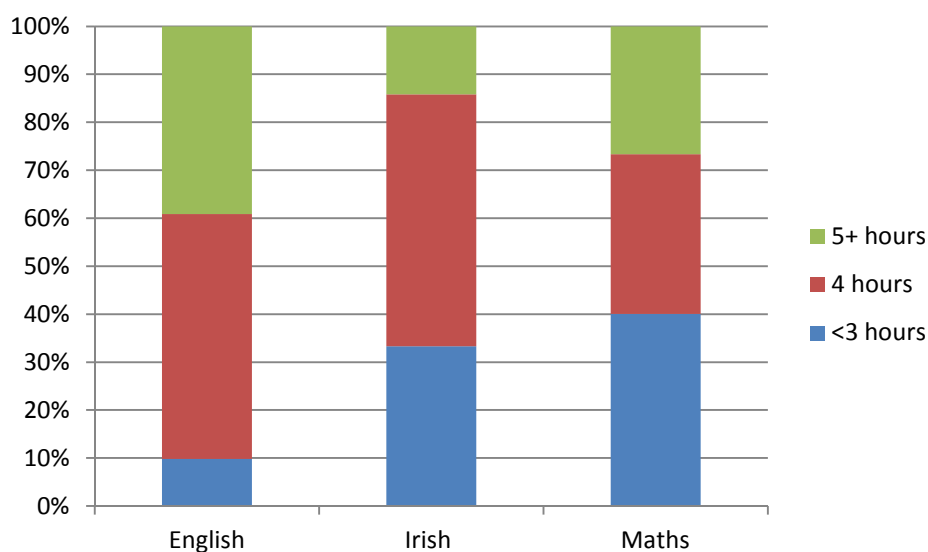


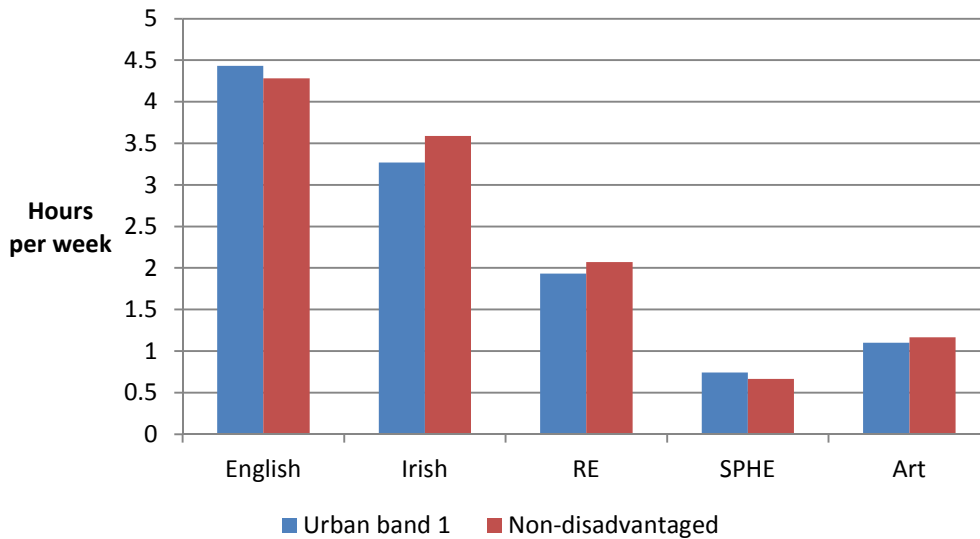
Figure 2.2: Time spent on English, Irish and Mathematics per week

Although more time is spent on English, Irish and Mathematics than on other subjects, Figure 2.2 indicates variation across different classrooms in the time allocated to these subjects. The most common pattern for English is four hours per week, although 40 per cent of classrooms spend five or more hours on the subject. For Irish, the most prevalent pattern is four hours but almost a third of classes spend three hours or less on the subject. A significant minority (40 per cent) of primary classrooms are found to spend three hours or less per week on Mathematics, while at the same time, a quarter of classes spend five or more hours on Mathematics.

2.2.2 Time Allocation and School Characteristics

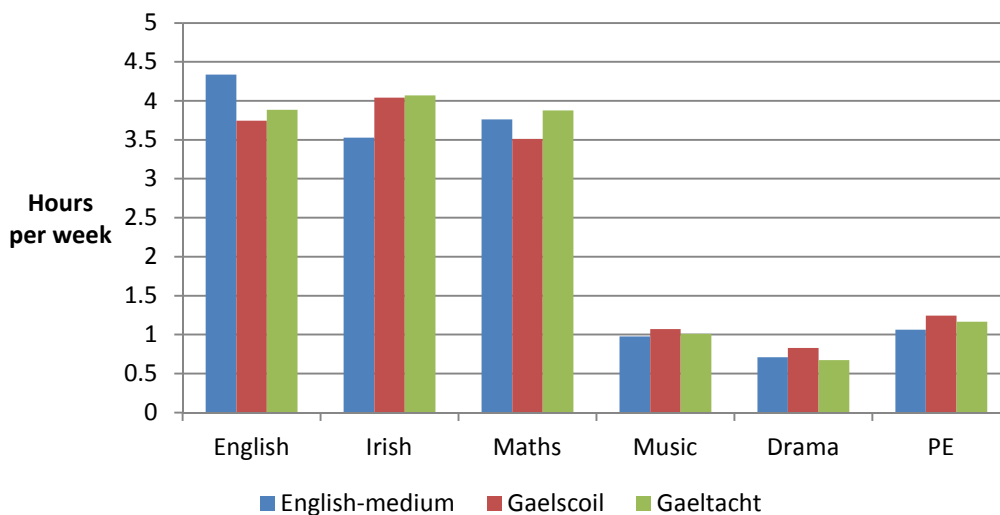
To what extent does time allocation vary across different types of schools? Three characteristics of schools were considered: DEIS status, language medium and gender mix. The discussion highlights those subjects for which significant variation in time allocation is found. The social mix of the school, as measured by DEIS status, is significantly associated with the time allocated to particular subjects. Nine-year-old children in DEIS urban band 1 schools spend more time on English and SPHE, and less time on Irish, RE and Art, than those in non-disadvantaged schools (see Figure 2.3 which depicts subjects for which significant differences were evident). Time spent on other subjects, including Mathematics, does not differ significantly by DEIS status. This suggests that primary teachers are adjusting their class timetable to reflect the perceived needs of their student intake, focusing on core literacy skills and also on personal-social development among more disadvantaged groups.

Figure 2.3: Average time spent on selected subjects, contrasting DEIS urban band 1 and non-disadvantaged schools

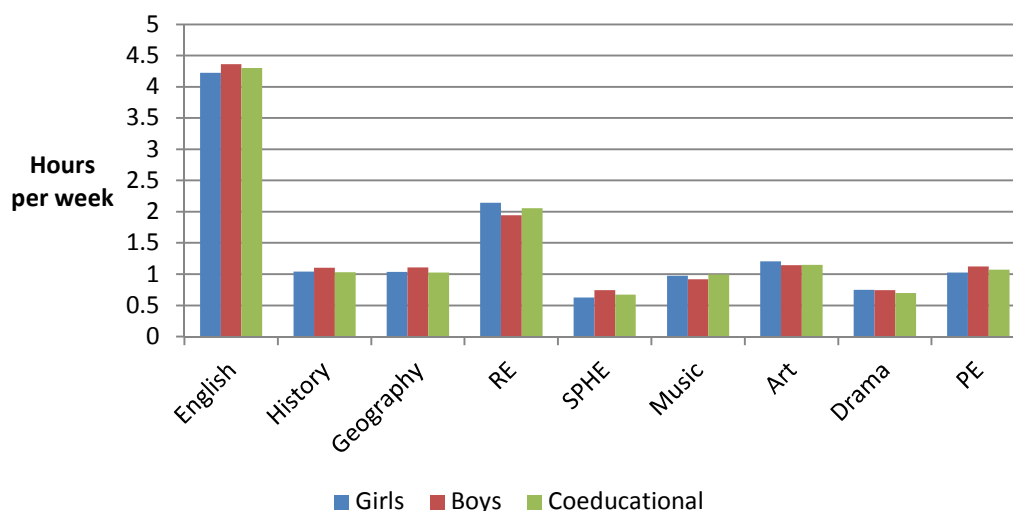


Differences are also evident in terms of the language medium of the school. Not surprisingly, English-medium schools allocate more time to English and less time to Irish than Irish-medium schools, both Gaeltacht schools and gaelscoileanna. However, other differences are evident, with gaelscoileanna devoting more time to Drama, Music and PE than either English-medium or Gaeltacht schools (Figure 2.4). The pattern appears to reflect a broader orientation to the promotion of Irish language and culture in gaelscoileanna rather than language medium per se.

Figure 2.4: Average time allocated to selected subjects by language medium of the school



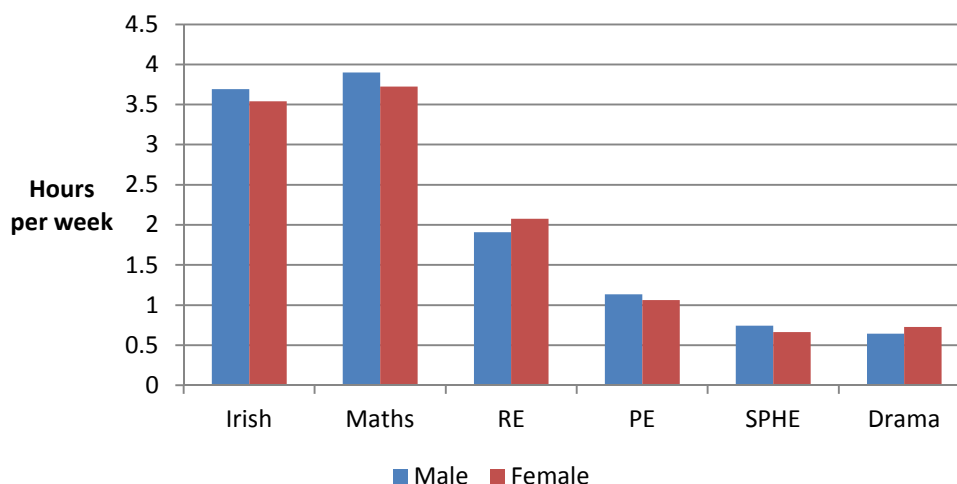
Variation in time allocation is apparent depending on the gender mix of the school. Children attending girls' schools spend somewhat more time on Art, Music and RE than those in boys' or coeducational schools; they also spend somewhat less time on English. Those attending boys' schools tend to spend somewhat more time on PE, History, Geography and SPHE than those in other schools (Figure 2.5).

Figure 2.5: Average time allocated to selected subjects by gender mix of the school

2.2.3 Time Allocation and Teacher Characteristics

The *Growing Up in Ireland* study collected information at both the school and classroom levels, allowing us to examine the extent to which time allocation reflects variation in teacher characteristics. Time allocation is found to vary by teacher gender and years of teaching experience.⁴ Male teachers spend somewhat more time on Irish, Mathematics, SPHE and PE, and less time on RE and Drama, than female teachers (see Figure 2.6, which depicts patterns for those subjects in which significant gender differences are found). Newly qualified teachers are found to spend somewhat less time on certain subjects, including Irish, Mathematics, History, Geography and Art, than their more experienced counterparts; they are also likely to devote more time to Drama. Differences between those teaching a single-grade class and those teaching a multi-grade class are not marked, but multi-grade teachers are found to spend slightly more time on RE, Science and Music. Because the *Growing Up in Ireland* sample was based on age (being nine years old) rather than stage, the classroom settings surveyed covered second to fourth class. No significant variation was found in time allocation by year group, with the exception of RE, where greater time spent on the subject in second class is likely to reflect sacramental preparation.

⁴ As might be expected, years of teaching experience and age are closely correlated. Throughout this report, we focus on teaching experience rather than age because of the important impact of professional life phases on teacher practice (see Day et al., 2007).

Figure 2.6: Average time allocated to selected subjects by teacher gender

2.2.4 Factors Influencing Time Allocation

Analyses so far have looked at the relationship between individual school or teacher characteristics and the time allocated to particular subjects. However, many school and teacher characteristics are interrelated so it is more useful to look at the impact of a set of different factors on time allocation simultaneously. In Tables 2.2a and 2.2b, we look at the school-level factors influencing time allocation. In keeping with the analyses presented above, DEIS urban band 1 schools spend somewhat more time on English and less time on Irish, RE and Art than those in other schools. Urban band 2 schools also spend somewhat less time on RE but in other respects do not differ from non-disadvantaged schools. Even controlling for gender mix and DEIS status, students attending gael scoileanna spend more time on PE, Drama and Music than other students.

Table 2.2a: School-level factors influencing time allocation to subjects (OLS regression model)

	English	Irish	Maths	History	Geography	Science
Constant	4.340	3.543	3.758	1.031	1.024	1.002
Gender mix:						
Boys	-0.001	0.088	0.038	0.074*	0.088**	0.030
Girls	-0.151*	-0.015	-0.042	0.012	0.016	0.014
Ref: Coed						
Language medium:						
Gaelscoil	-0.606***	0.516***	-0.239*	0.001	-0.019	-0.060
Gaeltacht	-0.452*	0.500**	0.083	-0.064	-0.052	-0.026
Ref: English-medium						
DEIS status:						
Urban band 1	0.154±	-0.301***	0.068	-0.001	0.001	0.003
Urban band 2	0.089	-0.058	-0.163±	-0.028	-0.020	0.013
Rural	0.008	0.085	0.144	0.062	0.039	-0.022
Ref: Non-disadvantaged						
Adjusted R ²	0.019	0.037	0.004	0.000	0.002	0.002

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

Table 2.2b: School-level factors influencing time allocation to subjects (OLS regression model)

	RE	SPHE	Music	Art	Drama	PE
Constant	2.077	0.657	0.996	1.159	0.691	1.058
Gender mix:						
Boys	-0.099*	0.069*	-0.071**	-0.007	0.053±	0.062*
Girls	0.112*	-0.055±	-0.018	0.060±	0.059±	-0.037
Ref: Coed						
Language medium:						
Gaelscoil	-0.117	0.077	0.078±*	0.000	0.137**	0.183***
Gaeltacht	-0.045	-0.048	0.038	0.058	-0.018	0.112
Ref: English-medium						
DEIS status:						
Urban band 1	-0.156**	0.087*	-0.014	-0.076±	-0.002	0.004
Urban band 2	-0.153*	0.054	-0.043	-0.029	0.016	0.031
Rural	0.087	0.034	-0.045	-0.069	-0.031	-0.022
Ref: Non-disadvantaged						
Adjusted R ²	0.013	0.006	0.006	0.001	0.004	0.015

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

Differences are again evident by gender mix of the school. Students in boys' schools spend more time on History, Geography, SPHE, and PE than those in coeducational schools; they also spend less time on RE and Music. Those in girls' schools spend more time on RE and Art and less time on English and SPHE than their counterparts in coeducational schools. Students in single-sex schools (both girls and boys) are found to spend more time on Drama than those in coeducational schools.

The next set of tables looks at the simultaneous influence of school and teacher characteristics on time allocation. Because teachers were sampled within schools, we use multilevel modelling to take into account the fact that teachers in the same school will share common experiences (see Goldstein, 2003). A two-level (teacher within school) regression model is employed to look at the influences on time allocation in each of the subject areas. A positive coefficient indicates that a factor is associated with more time spent on the subject and a negative coefficient indicates that a characteristic is associated with less time spent. These analyses also indicate the extent to which variation between schools or variation among teachers in the same school is greater in shaping time allocation. Table 2.3 shows the proportion of variance which is due to the school and the teacher for each of the subjects. Across all subjects, there is more variation between teachers than between schools, indicating that teachers have a good deal of autonomy in the way in which they allocate time to different subject areas. The higher proportion of variance at the school level in some subjects, specifically, PE, RE and Irish, indicates that schools are relatively more important in relation to these subjects.

Table 2.3: Proportion of variance at the teacher and school levels (null models)

	School level	Teacher level
English	7.0	93.0
Irish	11.8	88.2
Maths	3.9	96.1
History	6.7	93.3
Geography	7.4	92.6
Science	6.0	94.0
RE	13.1	86.9
SPHE	4.1	95.9
Music	4.7	95.3
Art	6.3	93.7
Drama	9.6	90.4
PE	18.8	81.2

Tables 2.4a and 2.4b look at the impact of school and teacher factors on time allocation to different subjects. Teacher gender has a significant effect, all else being equal, with female teachers spending more time on RE, Drama and Art, and less time on Irish, Mathematics and PE, than their male counterparts. Newly qualified teachers (that is, those teaching for less than three years) have a distinctive profile, spending less time than more experienced teachers on English, Irish and Mathematics; they also spend more time on Drama than other teachers. In addition, those teaching for more than 30 years tend to spend more time than other teachers on History, Geography and, to some extent, Science. All else being equal, multi-grade teachers spend more time on PE, Science and Music, and less time on Irish and English than teachers of single-grade classes. Teacher qualifications do not have a marked impact on time allocation. However, teachers with post-graduate qualifications (a postgraduate diploma, Master's or Ph.D.) spend slightly more time on History, Geography, Science, Music and Drama than teachers with undergraduate qualifications. The extent to which teachers feel they have control over various dimensions of their teaching is not found to impact on time allocation. The exception is that teachers who report greater control over the learning resources they use tend to spend more time on English. Teachers teaching classes in which at least one student has an emotional/behavioural difficulty tend to spend slightly more time in class on Mathematics, and on History and Geography. Other aspects of class composition were considered in the initial analysis, including the presence of students with learning disabilities, physical disabilities and/or with English/Irish as a second language. However, no association was found between these factors and time allocation, and these factors were subsequently excluded from the final analysis. Only the presence of children with emotional/behavioural difficulties was associated with time allocation (see Table 2.4a).

Even taking account of teacher characteristics, some differences remain evident between different types of schools. Gaelscoileanna spend more time on PE, and to some extent, on Music and Art than other schools. Boys' schools spend more time on History, Geography, PE and SPHE than other schools. In contrast, girls' schools spend more time on RE and Art. Controlling for other factors, DEIS urban

band 1 schools spend more time on English and SPHE, and less time on Irish, than other schools.

Table 2.4a: School-level and teacher-level factors influencing time allocation to subjects

	English	Irish	Maths	History	Geography	Science
Constant	3.907	3.379	3.501	0.881	0.891	0.866
<i>School characteristics</i>						
Gender mix:						
Boys	-0.017	0.071	0.027	0.075*	0.095**	0.041
Girls	-0.155	-0.022	-0.003	0.021	0.025	0.020
Ref.: Coed						
Language medium:						
Gaelscoil	-0.611***	0.502***	-0.246*	0.024	0.008	-0.029
Gaeltacht	-0.472*	0.478***	0.034	-0.071	-0.059	-0.039
Ref.: English-medium						
DEIS status:						
Urban band 1	0.165±	-0.298***	0.072	-0.002	-0.001	0.017
Urban band 2	0.047	-0.048	-0.179±	-0.020	-0.012	0.033
Rural	0.024	0.101	0.155	0.040	0.020	-0.041
Ref.: Non-disadvantaged						
<i>Teacher characteristics</i>						
Gender (female)	0.050	-0.100±	-0.155*	-0.001	0.004	0.044
Teaching experience:						
3-5 years	0.258***	0.099	0.167*	-0.009	-0.014	-0.032
6-10 years	0.233**	0.245***	0.202**	0.076*	0.053	0.054
11-20 years	0.290***	0.253***	0.379***	0.037	0.005	-0.018
21-30 years	0.295***	0.219***	0.362***	0.029	0.001	0.002
>30 years	0.313***	0.397***	0.375***	0.152***	0.141***	0.069±
Ref.: <2 years						
Postgraduate qualifications	0.007	0.025	-0.018	0.060**	0.045*	0.041*
<i>Contextual factors</i>						
Multi-grade class	-0.109±	-0.129**	-0.072	0.028	0.028	0.050*
Degree of control over learning resources used	0.043±	0.024	0.025	0.011	0.013	0.009
Composition of class (>1 pupil with EBD)	0.074	0.029	0.163***	0.065**	0.050*	0.026
School-level variation	0.060*	0.038*	0.033	0.012*	0.010*	0.009±
Teacher-level variation	0.895***	0.532***	0.758***	0.177***	0.161***	0.157***

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

Table 2.4b: School-level and teacher-level factors influencing time allocation to subjects

	RE	SPHE	Music	Art	Drama	PE
Constant	1.755	0.669	0.888	1.040	0.721	1.098
<i>School characteristics</i>						
Gender mix:						
Boys	-0.035	0.061±	-0.059*	-0.006	0.048	0.062*
Girls	0.115*	-0.040	-0.014	0.046±	0.061	-0.011
Ref: Coed						
Language medium:						
Gaelscoil	-0.072	0.080	0.095***	0.006***	0.135	0.191***
Gaeltacht	-0.081	-0.063	0.018	0.029	0.013	0.097
Re: English-medium						
DEIS status:						
Urban band 1	-0.110±	0.090*	0.004	-0.052	-0.024	0.005
Urban band 2	-0.100	0.050	-0.033	-0.010	-0.011	0.046
Rural	0.075	0.023	-0.063	-0.064	-0.029	-0.056
Ref: Non-disadvantaged						
<i>Teacher characteristics</i>						
Gender (female)	0.170	-0.057	0.030	0.076*	0.074*	-0.064*
Teaching experience:						
3-5 years	0.098±	-0.011	0.030	-0.005	-0.089**	0.015
6-10 years	-0.008	0.066	0.027	0.051	-0.179***	-0.038
11-20 years	-0.019	0.092	0.076*	0.105*	-0.161***	-0.021
21-30 years	0.110*	0.062±	0.057±	0.164***	-0.196***	-0.015
>30 years	0.159**	0.090*	0.084*	0.201***	-0.190***	-0.044
Ref: <2 years						
Postgraduate qualifications	0.038	0.031	0.033±	0.027	0.043*	0.021
<i>Contextual factors</i>						
Multi-grade class	0.058	0.016	0.035±	-0.044±	0.020	0.070**
Degree of control over learning resources used	0.018	-0.009	0.000	-0.005	0.004	-0.003
Composition of class (>1 pupil with EBD)	-0.003	0.018	0.027	0.008	-0.007	0.004
School-level variation	0.048***	0.007	0.004	0.011±	0.014**	0.023***
Teacher-level variation	0.336***	0.185***	0.123**	0.188***	0.154**	0.108**

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

Table 2.5: Correlations (Pearson's) between the proportions of time spent on different subject areas

	English	Irish	Maths	History	Geog-raphy	Science	RE	SPHE	Music	Art	Drama	PE
English	1.00	-0.05±	0.25***	-0.41**	-0.42***	-0.38***	-0.25***	-0.17***	-0.26***	-0.10***	-0.25***	-0.15***
Irish		1.00	0.18***	-0.30***	-0.33***	-0.32***	-0.12***	-0.27***	-0.15***	-0.06*	-0.21***	-0.15***
Maths			1.00	-0.37***	-0.37***	-0.41***	-0.38***	-0.10***	-0.26***	-0.09***	-0.39***	-0.17***
History				1.00	0.83***	0.63***	-0.12***	-0.05	0.01	0.00	-0.02	-0.06*
Geography					1.00	0.70***	-0.11***	-0.03	-0.02	0.01	0.01	-0.07**
Science						1.00	-0.04	-0.08***	0.046±	0.02	0.04	-0.07**
RE							1.00	-0.16***	0.12***	0.10***	0.05±	-0.08**
SPHE								1.00	0.007	0.03	0.03	0.18***
Music									1.00	0.10***	0.10***	0.13***
Art										1.00	0.00	0.16***
Drama											1.00	0.10***
PE												1.00

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

2.2.5 Trade-offs between Subjects

An important policy issue relates to whether there are trade-offs between the amount of time spent on particular subjects: to what extent does spending more time on English, for example, have implications for the time spent on certain other subject areas? Table 2.5 presents the correlation coefficients between the proportions of time spent on different subjects. Correlations range between 0, where is no relationship between the two variables, and 1, where two variables are perfectly related. The proportion of time spent on English is negatively associated with the proportion spent on all other subjects except Mathematics, and the trade-off is greatest between English and History, Geography and Science. Similarly, there appears to be a trade-off between Mathematics and other subjects, except English and Irish, and this is most evident for History, Geography and Science. Teachers who spend a greater proportion of time on Science also spend a greater proportion on History and Geography.

2.3 CURRICULUM GROUPINGS

Analyses so far have focused on the factors associated with the time spent on different subjects. However, it is worth exploring whether some schools or teachers combine subjects in particular ways to give children different experiences of the primary curriculum. Cluster analysis was used to examine the extent to which different curriculum clusters or groupings are evident. Based on the proportion of time spent on different subjects, three distinct clusters emerged:

- A balanced curriculum, accounting for the majority (60 per cent) of settings; these classes spend time on a range of subjects;
- A broad curriculum, accounting for a tenth of classes, where more time is spent on a variety of subject areas, especially History, Geography, Science, and SPHE;

- A core curriculum, accounting for 30 per cent of classes, where more time is spent on English, Irish and Mathematics, and less time is spent on Drama and Music.

Table 2.6 looks at the school and teacher factors which influence the curriculum grouping adopted, contrasting the 'broad' and 'core' groups against the 'balanced' group. Boys' schools are more likely than coeducational schools to provide a broad curriculum than a balanced or core curriculum. Meanwhile, girls' schools are less likely to provide a core curriculum. Gaelscoileanna are more likely than Gaeltacht or English-medium schools to provide a broad curriculum. Private (fee-paying) schools are much more likely to provide either a broad or a core curriculum than non-fee-paying schools. All else being equal, DEIS schools do not differ markedly from non-disadvantaged schools in their curriculum cluster; however, DEIS urban band 1 schools are somewhat more likely to provide a broad curriculum.

Table 2.6: *Multinomial logistic regression model of curriculum clusters, contrasting 'broad' and 'core' groupings against a 'balanced' curriculum*

	Broad	Core
Constant	-2.771	-0.996
<i>School characteristics</i>		
Gender mix:		
Boys	0.656**	0.093
Girls	-0.204	-0.562**
Ref: Coed		
Language medium:		
Gaelscoil	0.798*	-0.116
Gaeltacht	-0.828	-0.298
Re: English-medium		
DEIS status:		
Urban band 1	0.670*	0.207
Urban band 2	0.358	0.096
Rural	0.406	-0.190
Ref: Non-disadvantaged		
Private school	2.738***	1.698**
<i>Teacher characteristics</i>		
Gender (female)	-0.186	-0.375*
Teaching experience:		
3-5 years	-0.281	0.457*
6-10 years	0.536*	0.808***
11-20 years	0.277	0.952***
21-30 years	0.335	1.086***
>30 years	1.062***	0.822***
Ref: <2 years		
Postgraduate qualifications	0.465*	-0.164
<i>Contextual factors</i>		
Multi-grade class	0.439*	-0.298*
Composition of class (>1 pupil with EBD)	0.451*	0.215±
School-level variation	0.491*	0.190±

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

In terms of teacher characteristics, female teachers are less likely to focus on a core curriculum than their male counterparts. The likelihood of providing a core curriculum tends to increase over the course of teaching service, with some fall-off after 30 years of teaching. Teachers who have been teaching for more than 30 years are more likely to provide either a broad or a core curriculum than other teachers. Qualifications also make a difference, with those with post-graduate qualifications being more likely to provide a broad curriculum, even controlling for experience and gender. Teachers whose classes have at least one student with an emotional/behavioural difficulty are more likely to provide either a broad or a core curriculum. Teachers working with a multi-grade class are more likely to provide a broad curriculum, and less likely to focus on a core curriculum, than other teachers.

2.4 CONCLUSIONS

This chapter has explored the allocation of time to different subject areas within the primary classroom. The Primary Curriculum was designed to allow teachers flexibility in planning their class-work across different subjects, although recommended guidelines were provided. Analyses in this chapter show considerable variation between schools and between individual teachers in the amount of time spent on different subject areas. The greatest amount of time is allocated to English, Irish and Mathematics. However, variation is also evident for these subjects, with class settings differing by two hours or more per week in the time spent. These differences are substantial, and averaged over the school year can mean over 18 full days less instruction in a particular subject. If, as international evidence suggests, more time on a particular subject enhances achievement, all else being equal, then this is likely to facilitate the emergence of achievement gaps in certain subjects.

The study indicates that the time a child spends on different subjects reflects the school they attend and the teacher they have. The gender mix of the school, its language medium and DEIS status are all associated with the pattern of variance in time allocation. Thus, it appears that teachers adjust their classroom planning to reflect the intake of students to the school and the overall school ethos. Time allocation also varies by teacher characteristics. Female teachers are found to spend more time on particular subject areas, including RE and Drama. Male teachers are more likely to focus on a 'core' curriculum, with more time spent on English, Irish and Mathematics. This focus on a core curriculum also appears to increase with teacher experience. However, this pattern should not be interpreted as causal; it may be that teacher education for earlier cohorts emphasised a focus on the 'core' curriculum rather than that individual teachers change their approach as they become older. Teachers with post-graduate qualifications are found to provide a broader curriculum in terms of time allocation to a range of subjects than other teachers.

In the context of policy debate about the 'overcrowded' curriculum, these analyses yield fresh insights into possible 'trade-offs' between different subject

areas. Teachers who devote more time to English tend to spend less time on other subjects, especially History, Geography and Science. Similarly, additional time on Mathematics is traded-off against these three subjects as well as RE and Drama. The implementation of the *Literacy and Numeracy for Life* strategy, through additional time devoted to literacy and numeracy, is therefore likely to have important consequences for the teaching of other subjects. This impact will very much depend on whether literacy and numeracy skills are taught in a cross-curricular way. Devoting additional time to the *subjects* of English and Mathematics is likely to lead to a very significant reduction in the time devoted to other subject areas and thus children's access to a broad and balanced curriculum.

Chapter 3

Teaching Methods

3.1 INTRODUCTION

There has been considerable discussion about teaching methods and their relative effectiveness, particularly for primary school students. Teachers may draw from a wide repertoire of approaches, including whole-class teaching, setting individual work for students, having students work in pairs or groups, using discussion, providing practical demonstrations (e.g. in Science), and allowing students to work with their hands (e.g. in visual arts). International literature suggests that different teaching approaches and strategies may vary in their effectiveness, particularly across different student groups and across lessons of differing content and goals. Much of the literature compares teacher-centred or direct instruction approaches (that is, the ‘traditional’ image of the students facing the teacher who is at the top of the class and who does most of the talking) to more interactive and child-centred approaches, within which ‘constructivist’ approaches could be included. While there is a good deal of debate about the meaning and application of constructivist approaches, the core elements centre on the child’s own perspective and knowledge being a starting point for learning and on the importance of the child as active learner rather than passive ‘recipient’ of knowledge. In a synthesis of British research on effective teaching, Muijs and Reynolds (2011) point to some general features of effective teaching, but also to variation across studies in the characteristics of effective and ineffective teachers. Muijs and Reynolds (2002) found that it was teachers who spent more time teaching the whole class as opposed to individual pupils whose pupils showed stronger gains. However, they also point to a review of Dutch research which found that whole-class teaching was positively related to pupil outcomes at primary level in just four out of 29 studies, while differentiation (that is, tailoring the lesson to the different needs of students in the class) was negatively related to outcomes in two studies, and positively related to outcomes in none (Scheerens and Creemers, 1996).

Some international comparative studies, such as the ‘Worlds Apart’ report (Reynolds and Farrell, 1996), note that one of the main factors that distinguished more successful countries in international achievement rankings (like Singapore) was a more widespread use of whole-class interactive teaching. Muijs and Reynolds (2011) argue that the most widely used and most effective strategy at the disposal of teachers is direct or teacher-centred instruction. They note, however, that this approach has been found to be most effective in teaching rules, procedures and basic skills, especially to younger pupils (Good and Brophy, 1986). Research also points to variation in teacher effectiveness across groups – evidence suggests that direct instruction is particularly helpful for pupils from

lower socio-economic backgrounds and low attaining pupils (Muijs and Reynolds, 2005; Schippen et al., 2005). Similarly, this approach has been found to be more effective for pupils from disadvantaged backgrounds, or for pupils starting from a low level of achievement in a subject (Muijs and Reynolds, 2000).

In the United States, D'Agostino (2000) points to changes in the effectiveness of different teaching approaches over the elementary school years. His research found that in grades 1 and 2, teachers who emphasised a teacher-directed, basic-skill orientation appeared to be most effective in both mathematics and reading gains. A student-centred, advanced-skill focus did not appear to be an effective teaching strategy in these early primary grades. However, by fourth grade, there was evidence that the introduction of student-centred instructional elements into classroom activities and structures was the most effective approach, even for facilitating the development of students' basic skills. He concludes that 'students in the middle elementary grades need to be provided critical thinking opportunities and they need to have occasions where they direct their own learning' (p.231).

A number of studies point to the potential benefits of small group work, or collaborative peer learning, and peer tutoring in student learning. In synthesising the evidence, Muijs and Reynolds (2011) highlight the potential advantages of small group work over individual practice. The main benefit appears to lie in the cooperative aspects it can help foster. Working with other pupils may help them to develop their empathetic abilities, by allowing them to see others' viewpoints. Pupils can provide each other with scaffolding in the same way the teacher can during questioning. Small group work can also help students to restructure their own thinking through talking to others, allowing them to understand their own strengths and weaknesses better (O'Donnell, 2006). Veenman et al. (2005) found a significant relationship between providing explanations in small groups and students' mathematics achievement. Webb and Mastergeorge (2003) highlight the importance for student learning of students asking for specific explanations rather than general questions or requesting answers; emphasising the importance of creating a classroom culture that focuses on meaning and solution rather than correct answers.

Constructivism, as much a teaching philosophy as an educational strategy, has been highly influential in education (Muijs and Reynolds, 2011). Within education, constructivist ideas are translated as meaning that all learners actually construct knowledge for themselves, rather than knowledge coming from the teacher and being 'absorbed' by the student. As a result, learning is an active process and the construction of knowledge is not just an individual process but socially constructed through interaction with peers, teachers, parents and so on. Teaching is about empowering the learner, and allowing the learner to discover and reflect on realistic experiences, often with the use of hands-on and real-life materials, leading to authentic learning and deeper understanding. Muijs and Reynolds (2011) cite a range of studies assessing the value of constructivist

teaching strategies. Many of the studies show positive effects on student learning – including research in Korean classrooms (Kim, 2005), a Dutch study on primary students (De Jager, 2002) and the MathsWings project in the US (Madden et al., 1999) – as well as on other outcomes like students' writing (Au and Carroll, 1997) and student motivation (Koebley and Soled, 1998). However, Muijs and Reynolds also point to research showing that pupils taught by teachers using a direct instruction approach have higher achievement levels than students taught by teachers with constructivist beliefs (Gales and Yan, 2001; Klahr and Nigam, 2004). Further, they note that good classroom management and a positive climate are essential to making constructivism work in the classroom. Kirschner et al. (2006) argue that much of the empirical evidence indicates that constructivist-based minimally guided instruction is less effective and less efficient than instructional approaches that place a strong emphasis on guidance of the student learning process. However, Spiro and DeSchryver (2009) note that many of the studies finding that direct instruction approaches have more positive learning outcomes than constructivist approaches are typically focused on well-structured domains like mathematics and Science. Few studies have examined the effectiveness of different approaches for successful learning in less structured domains like Social Studies, Humanities and Art.

3.2 VARIATION IN TEACHING METHODS ACROSS TEACHERS

The *Growing Up in Ireland* data offer a valuable opportunity to assess the approaches teachers take in teaching (middle stage) primary school children and the extent to which teaching approaches vary across teachers and schools and classrooms of differing composition. Teachers were asked a series of 19 questions about the frequency with which different activities took place in their classroom – including 'pupils copy notes from the board', 'pupils suggest topics to be covered in class' and 'you teach pupils as a whole class' (the full list is presented in Appendix A) – to which teachers could respond 'never or almost never', 'some days', 'most days' or 'every day'. For many of the items, there was little variation across teachers in their responses. For example, almost all (95 per cent) teachers responded that 'pupils work individually in class using their textbook or worksheet' most days or every day. Similarly, the vast majority of teachers reported that they asked pupils questions in class (99 per cent), pupils asked them questions (92 per cent) and they teach pupils as a whole class (84 per cent) most days or every day.

However, teachers varied somewhat in the frequency with which they employ more active teaching approaches, including the use of pair-work and group-work, the frequency with which differentiated activities are provided and the extent to which pupils get the opportunity to engage in hands-on learning. The prominence of these approaches appears to vary across teachers of differing teaching experience and across different student groups, particularly in terms of the gender composition of the student body.

The results show important differences in the prominence of pair-work, group-work and hands-on activities and the extent to which teachers provide differentiated activities to pupils. Such differences are particularly apparent when we consider the length of teaching experience – young teachers and those more recently qualified are far more likely to provide pair- and group-work and hands-on activities to pupils than older and more experienced teachers. As illustrated in Figure 3.1, nearly three-quarters of children with recently qualified teachers (less than two years experience) work in pairs frequently, while this compares to just one-third of 9-year-olds with a teacher of more than 30 years experience. Similarly, as shown in Figure 3.2, while 70 per cent of children with recently qualified teachers have the opportunity to engage in hands-on activities most days/every day, this is the case for 44 per cent of children with highly experienced teachers (more than 30 years experience). Less experienced teachers are also more likely to encourage pupils to ask each other questions in class (over three-quarters of teachers of less than two years do so daily compared to half of the most experienced teachers) and they are more likely to consider the pupils' experience and environment as the starting point for learning. These results suggest an important shift in the approaches taken by teachers – with more recent graduates adopting more active teaching methods than their more experienced counterparts.

At first glance, it appears that male teachers are less likely to take such innovative approaches in their teaching. However, this largely reflects the differing age profile of male and female teachers: male teachers are less likely to be in the three to ten year teaching bracket, with a greater proportion teaching more than 30 years. When we take account of the age composition of the group, there do not appear to be significant differences between male and female teachers in their approach to teaching.

Figure 3.1: *Proportion of children in classes where teachers use pair-work and group-work most days/every day, by length of teacher's experience*

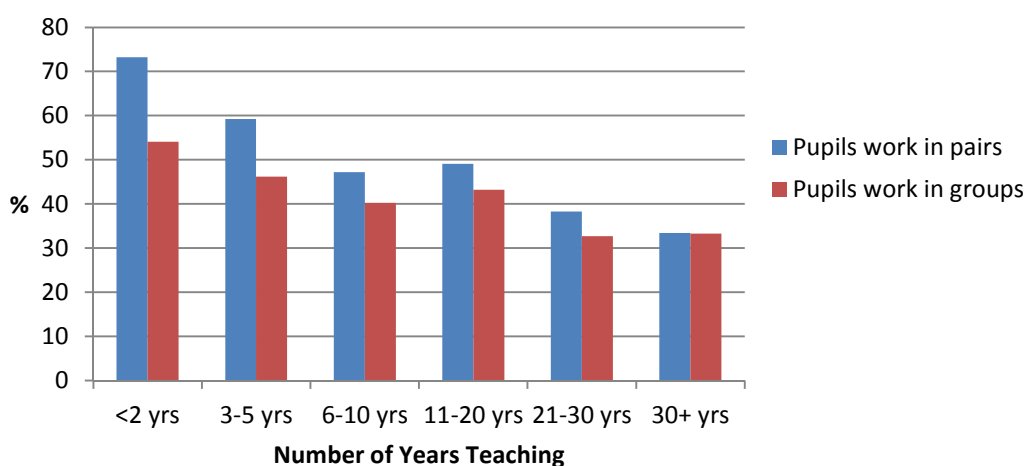
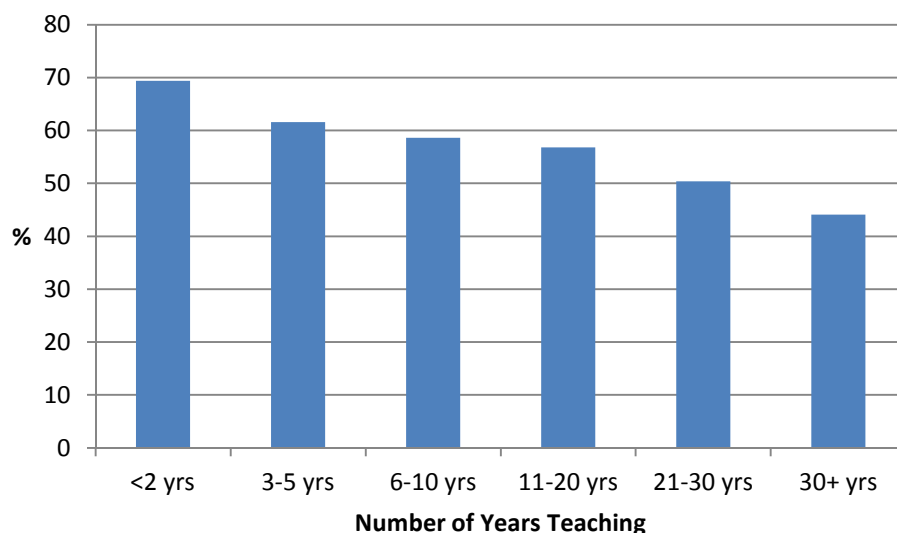


Figure 3.2: *Proportion of children in classes where teachers use hands-on activities most days/every day, by length of teacher's experience*



3.3 TEACHING METHODS AND CLASS SIZE

There is some evidence that class size makes a difference to the approach taken by teachers at primary level, with smaller class sizes allowing a greater focus on differentiated activities and group activities. In assessing the teaching approaches taken with classes of differing size, it is important to keep in mind that class size is correlated with other school characteristics, in particular DEIS status and school type (in terms of fee-paying status, language medium and gender mix). For example, the vast majority of children in urban band 1 DEIS schools have class sizes of less than 25 pupils, whereas over three-quarters of children attending non-DEIS schools are in class sizes of greater than 25 pupils (with over one-third attending classes of greater than 30 pupils). Children attending gaelscoileanna are more likely to be in classes of greater than 30 pupils, while girls attending single-sex schools are less likely to be in large classes.

Figure 3.3 shows the prevalence of pair-work and group-work by class size. While teachers are increasingly likely to employ pair-work with increasing class size, the opposite is the case for group-work; such opportunities are more prevalent among smaller classes. It appears increasing class size means less group-work activities and an increasing reliance on grouping children in pairs. When we consider the extent to which teachers provide differentiated activities to their pupils, again smaller classes seem to allow more child-centred approaches. As shown in Figure 3.4, while over 80 per cent of children in small classes (less than 20 pupils) are taught by teachers who provide differentiated activities in most lessons/every lesson, this is the case for just two-thirds of children in classes of more than 30 pupils. Overall, the findings suggest that children in smaller class sizes may benefit in terms of the opportunity their teacher has to employ more active methods.

Figure 3.3: *Proportion of children in classes where teachers use pair-work and group-work most days/every day, by class size*

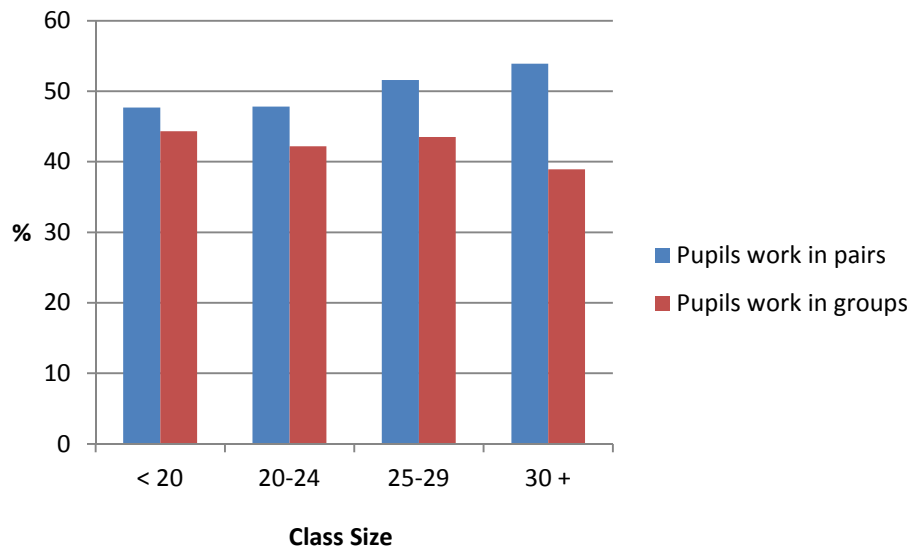
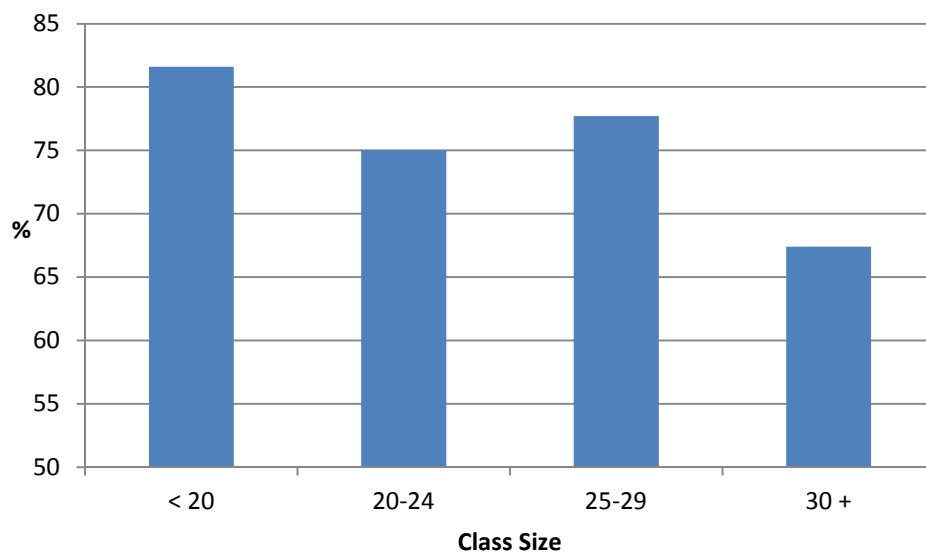


Figure 3.4: *Proportion of children in classes where teacher provides differentiated activities most days/every day, by class size*

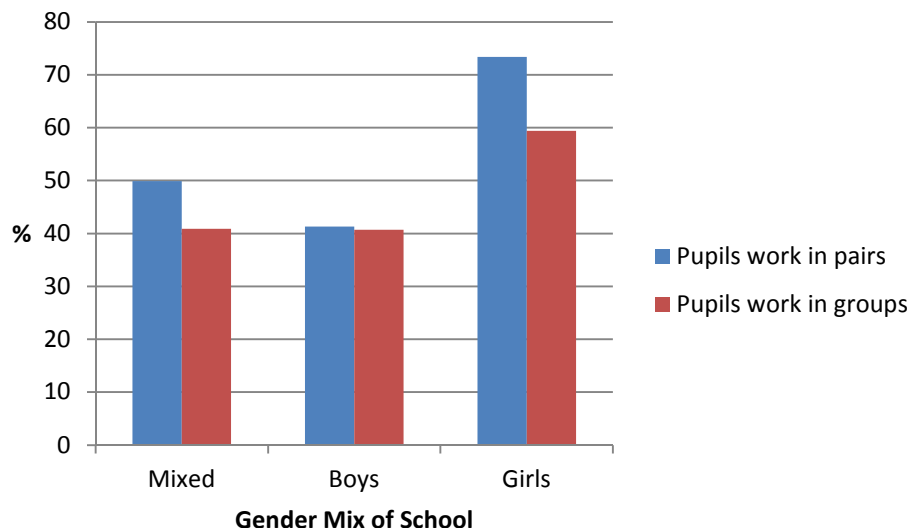


3.4 TEACHING METHODS AND SCHOOL TYPE

The results also suggest that children across different school settings receive different teaching approaches, with particularly noteworthy findings based on school gender mix. Children in girls' only schools are more likely to have teachers who provide differentiated activities as appropriate and are substantially more likely to get frequent opportunities to engage in hands-on activities. While 73 per cent of pupils in girls' only schools participate in hands-on activities most days/every day, this is the case for just half of pupils in boys' only schools. Similarly, girls enrolled in single-sex schools are substantially more likely to have teachers who use pair-work and group-work most/every day (Figure 3.5). Teachers in girls' only schools also tend to place less emphasis on students

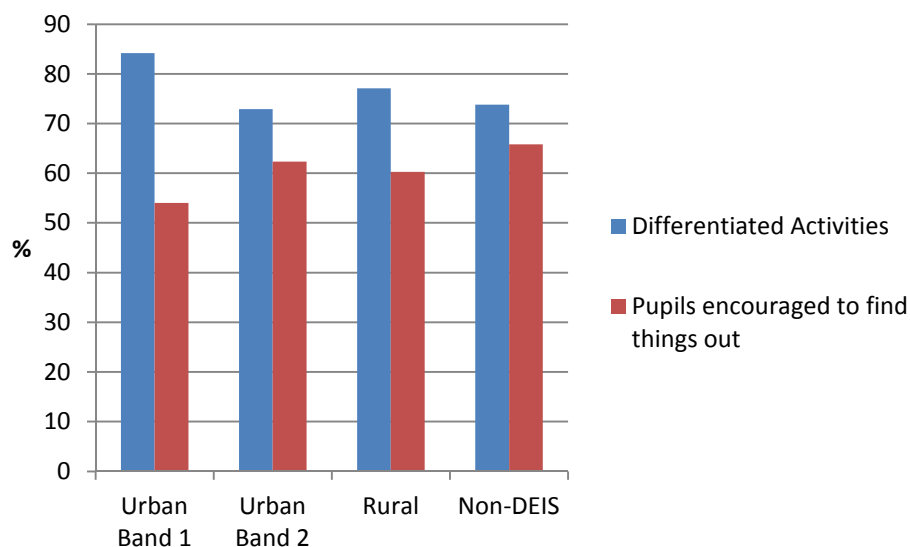
copying notes from the board, with a greater emphasis on students ‘finding things out for themselves’. In relation to homework, teachers in boys’ schools are more likely to check homework during class time, while homework is taken up for correction more often in girls’ schools.

Figure 3.5: *Proportion of children in classes where teachers use pair-work and group-work most days/every day, by school gender mix*



Children in DEIS schools also appear to receive somewhat distinct teaching approaches compared with children in non-disadvantaged schools. On the one hand, children in the most disadvantaged school contexts are more likely to have teachers who regularly use differentiated activities in their classrooms. However, these children are also less likely to have teachers who encourage them to find things out for themselves, with teachers preferring more structured teacher-directed approaches in these school contexts (Figure 3.6).

Figure 3.6: *Proportion of children in classes where teachers use differentiated activities and encourage them to find things out most days/every day, by school gender mix*



Children in gaelscoileanna are more likely to benefit from pair- and group-work than children in other school settings, as are children attending fee-paying schools. While in both the fee-paying sector and Irish-medium schools teachers place less emphasis on providing differentiated activities, they place a greater emphasis on hands-on activities, using play to facilitate learning and encouraging pupils to find things out for themselves. In contrast, they appear to rely less frequently on more traditional approaches like copying notes from the board.

3.5 VARIATION IN THE USE OF ACTIVE TEACHING METHODS

Factor analysis of the teaching methods items revealed a scale variable measuring the extent to which teachers encouraged more interaction in the classroom or what can be termed an active teaching approach. The scale is comprised of the following six items (with a high reliability: alpha score = .72):

- Pupils work in pairs
- Pupils work in groups in class
- Pupils ask each other questions in class
- Pupils get the opportunity to engage in hands-on activities
- Pupils are encouraged to find things out for themselves
- You use play to facilitate pupil learning.

The results show wide variation across teachers in the extent to which they adopt active teaching methods in their primary classrooms. As illustrated in Figure 3.7, more recently qualified teachers are far more likely to score highly on the active teaching methods scale than their more experienced counterparts. For half of children with teachers teaching less than two years, their teachers score high on the active methods scale; this is the case for less than a quarter of children with teachers of more than 30 years experience. While female teachers appear more likely to adopt such active methods, this largely reflects the differing age profile of male and female teachers noted earlier.

When we consider the school setting, it appears that children in rural DEIS and urban band 1 DEIS schools are less likely to have teachers who adopt active teaching methods (Figure 3.8). There is also some evidence to suggest that teachers in fee-paying schools are more likely to adopt more active teaching approaches, as are teachers in single-sex girls' schools (Figure 3.9). Finally, it appears that class size plays a role in the approach taken – children in small classes are significantly more likely to have teachers who score highly on the active teaching methods scale. While 30 per cent of children in larger class groupings have teachers who adopt active teaching approaches, this is the case for nearly half of children in smaller class groups (Figure 3.10).

Figure 3.7: *Proportion of children with teachers scoring high on the active methods scale by teacher’s gender and length of teaching experience*

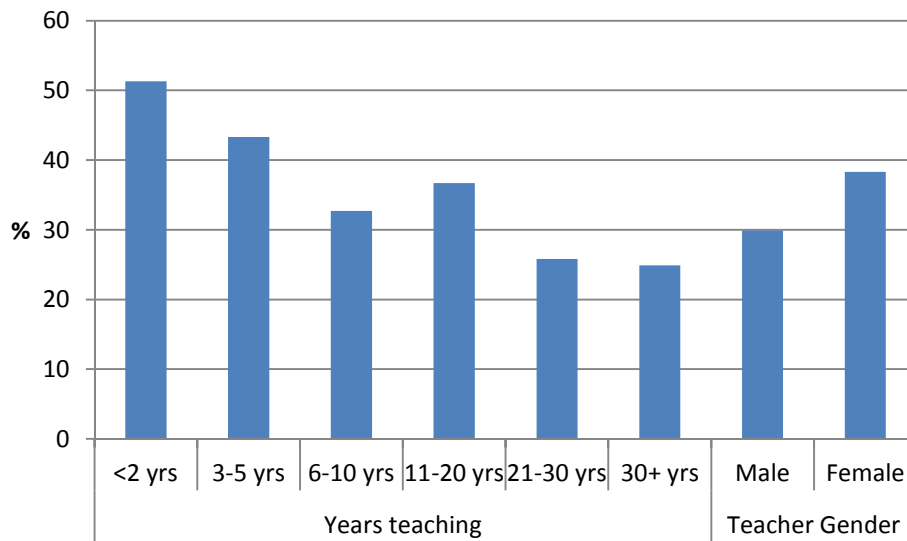


Figure 3.8: *Proportion of children with teachers scoring high on the active methods scale by school DEIS status*

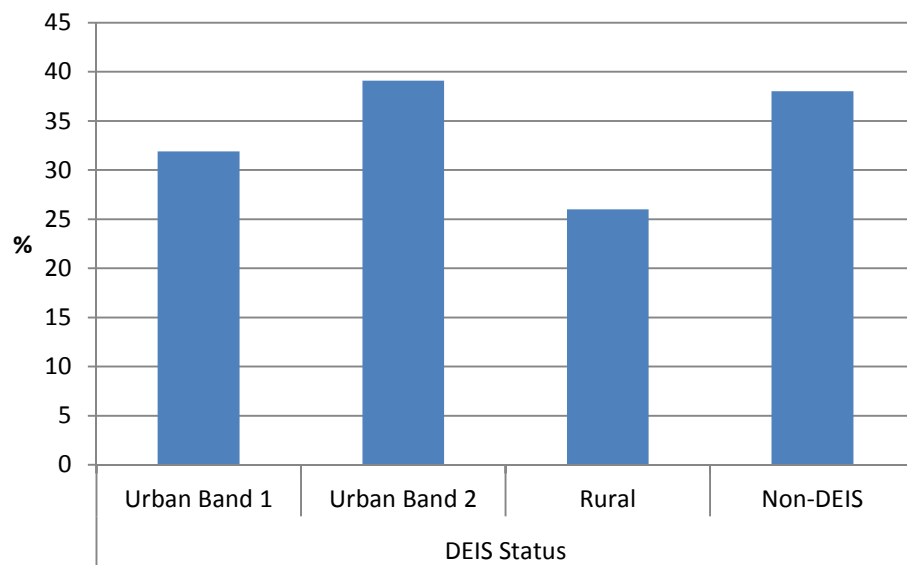


Figure 3.9: *Proportion of children with teachers scoring high on the active methods scale by school type and gender mix*

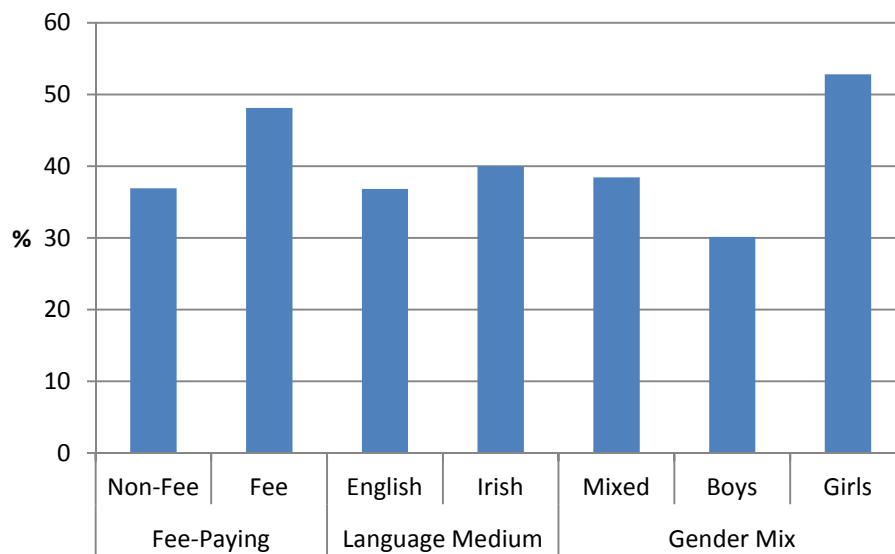
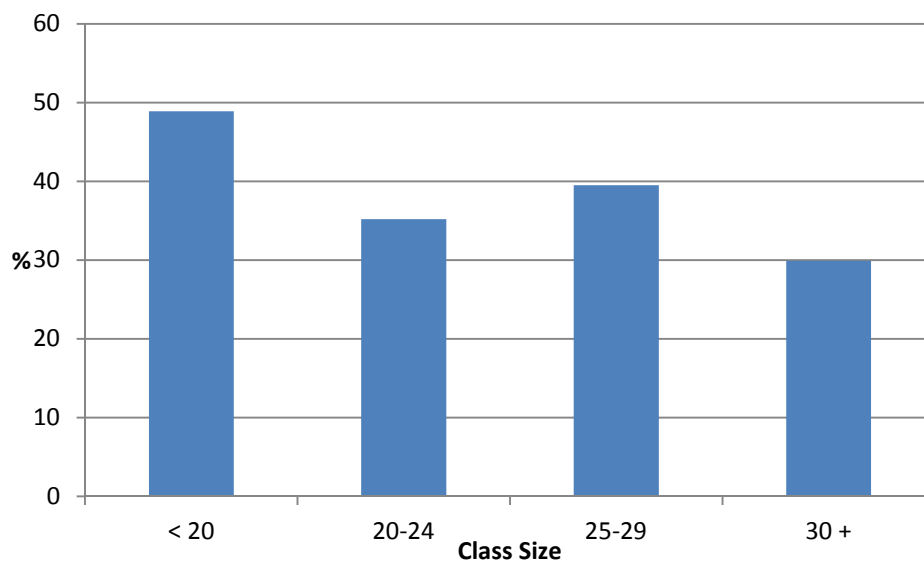


Figure 3.10: *Proportion of children with teachers scoring high on the active methods scale by class size*

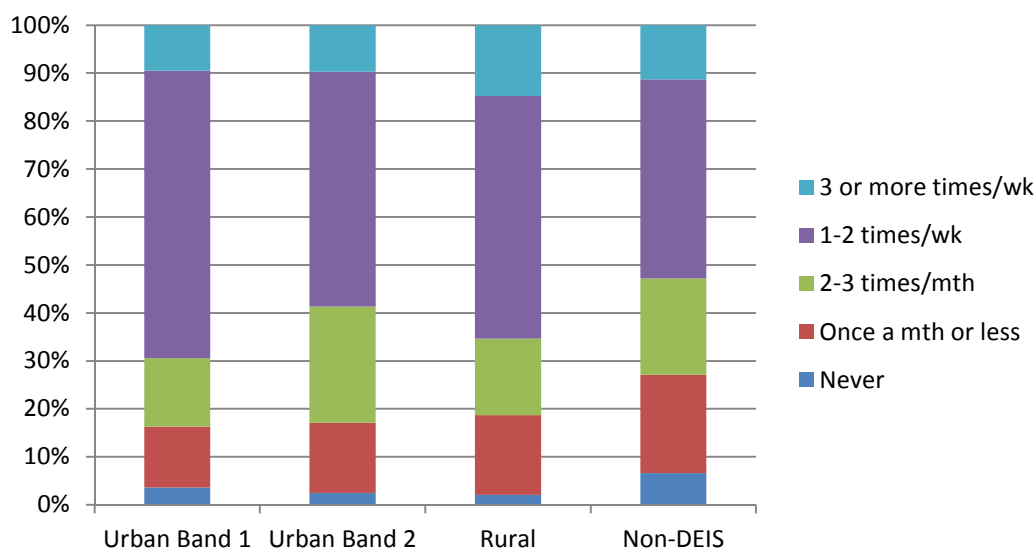


3.6 USE OF MULTIMEDIA/ICT

Teachers were also asked about their use of multimedia in the classroom and the frequency with which students accessed computers and the internet. The results show a greater use of DVD/audio in single-sex girls' schools and in schools in the fee-paying sector. The use of computer facilities, however, is much less prevalent in the fee-paying sector: less than 10 per cent of children in fee-paying schools reported daily use of a computer compared to one-quarter of children in non-fee-paying schools. The use of ICT also appears higher in rural DEIS and urban band 1 DEIS schools, along with schools in the Gaeltacht. To illustrate, while 70 per cent of children in urban band 1 DEIS schools use computer facilities in the classroom

at least once a week, this is the case for just over half of their peers in non-DEIS schools (Figure 3.11).

Figure 3.11: Frequency with which children use a computer in the classroom by school DEIS status



McCoy et al. (2012, forthcoming) point to the potentially beneficial role played by ICT access in the classroom. They find that internet access in the classroom plays an important role in enhancing social networking activities outside of the classroom, while children who have access to a computer in the classroom are more likely to engage in cultural activities outside of the classroom. The results further showed that participation in these cultural and social networking activities outside school are associated with enhanced reading and mathematics performance.

3.7 INFLUENCES ON TEACHING METHODS

This section uses the scale of active teaching methods described above to explore the teacher and school factors influencing the type of teaching used in the classroom. As in Chapter Two, multilevel modelling is used to take account of the clustering of teachers within schools. Multilevel modelling indicates that, without taking account of any teacher and school factors, there is significant variation between schools and among teachers within schools in the type of teaching methods used. Interestingly, 56 per cent of the variation is between schools, with 44 per cent between teachers. This is quite different from the pattern for time allocation and implies a greater consistency at the school level in the teaching methods used than in the organisation of the class day.

In keeping with the descriptive analyses presented above, the teaching methods used vary by teacher gender and years of teaching experience (Table 3.1). Female teachers are more likely to use active methods than their male counterparts, even when the composition of the class group and school characteristics are taken into account. Newly qualified teachers are the most likely to use more

active learning methods while the lowest levels of use are found among teachers who have more than 20 years experience.

The approach to teaching is found to reflect the type of classroom setting. Teachers with small classes (fewer than 20 pupils) are most likely to use active teaching approaches while those with large classes (with more than 30 pupils) are least likely to do so. This is likely to reflect greater (perceived) logistical constraints in using active methods with larger groups but may also reflect space constraints within the classroom (see Darmody et al., 2010). The mix of pupils within the class also influences the approach to teaching used. Teachers with classes where at least one student has a learning disability or an emotional/behavioural problem are more likely to use active teaching methods, most likely in an attempt to fully engage all groups of children. The situation is quite different when newcomer (immigrant) students are considered. Here the relationship is negative, meaning that teachers with newcomer students are less likely to use active methods.

Teaching methods are found to vary by school characteristics. In keeping with the descriptive analyses presented above, teachers in girls' schools are more likely to use more active approaches than those in boys' or coeducational schools. In addition, teachers in gaelscoileanna are more likely to use active methods than those in English-medium or Gaeltacht schools. Finally, teachers in DEIS urban band 1 schools are less likely to use such active methods than teachers in other schools, a pattern which may reflect the greater use of established literacy and numeracy programmes in these settings. Even taking teacher background, class setting and school factors into account, significant variation in teaching methods remains between schools and between teachers. It is likely that a range of other factors, including initial education, continuous professional development, principal leadership strategy and whole-school policies, all play a role in shaping this variation.

Table 3.1: Multilevel regression model of active teaching methods scale

	Coefficient
Constant	2.837
<i>Teacher characteristics</i>	
Gender (female)	-0.093***
Teaching experience:	
3-5 years	-0.103***
6-10 years	-0.160***
11-20 years	-0.131***
21-30 years	-0.241***
>30 years	-0.245***
Ref: <2 years	
<i>Contextual factors</i>	
Size of class:	
20-24	-0.140***
25-29	-0.114***
30+	-0.214***
Ref:<20	
Composition of class:	
>1 pupil with learning disabilities	0.041**
>1 pupil with EBD	0.095***
>1 newcomer pupil	-0.039***
<i>School characteristics</i>	
Gender mix:	
Boys	0.005
Girls	0.144**
Ref: Coed	
Language medium:	
Gaelscoil	0.168**
Gaeltacht	-0.058
Re: English-medium	
DEIS status:	
Urban band 1	-0.130*
Urban band 2	0.021
Rural	-0.046
Ref: Non-disadvantaged private school	
School-level variation	0.139***
Teacher-level variation	0.102***

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

3.8 SUMMARY

International research suggests that different teaching approaches and strategies may vary in their effectiveness, particularly across different student groups and across lessons of differing content and goals. The current study shows important differences between initial teachers or those relatively recently qualified and longer-serving teachers in the approach taken in teaching children in the mid-primary years. More active teaching approaches like pair-work, group-work and hands-on activities are all more prevalent among recently qualified teachers and decline in prominence with length of teaching experience. This is a significant finding and may signify an important shift in teacher training methodologies over time. There is also evidence to suggest that teachers take different approaches in different school and classroom contexts – with more active methods adopted in single-sex girls' schools, fee-paying schools and gaelscoileanna, and more teacher-centred approaches in rural DEIS and urban band 1 DEIS schools. Finally the results point to the significance of class size for teaching approaches – with smaller classes allowing more active approaches while teachers of larger classes are more likely to take more traditional approaches, perhaps reflecting greater logistical constraints and space constraints.

Chapter 4

Children's Engagement

4.1 INTRODUCTION

This chapter is focused on children's engagement with their school activities and school work. Jimerson et al. (2003) argue that school engagement is best conceptualised as 'a multifaceted construct that includes affective, behavioural and cognitive dimensions' (pp.11-12). This definition is a consistent feature of the literature on school engagement, with many viewing school engagement as encompassing the affective (e.g., likes school), behavioural (e.g., finishing homework, participating in activities) and cognitive (e.g., self-efficacy, motivation) investments that a student makes at both the classroom and school level (Perdue et al., 2009). However, research also suggests that in many ways these different dimensions are intertwined. McCoy and Banks (2012, forthcoming), in examining school engagement among children with special educational needs, find that both academic engagement and peer/social relations play a central role in understanding children's affective engagement with school. Perdue et al. (2009) also point to the centrality of peer relations – in their study they find that peer relations early in primary education play a significant role in understanding school engagement a number of years later.

School engagement is argued to be a key element of academic achievement, as well as lowering the risk of negative behaviours like delinquency, aggression and early school dropout (Fredricks et al., 2004; Hill and Werner, 2006; Jimerson et al., 2003; Simons-Morton, 2004; Sinclair et al., 2003; Perdue et al., 2009). As Perdue et al. (2009) note, specific academic and social experiences as early as first grade can relate to eventual dropout, as they represent the beginning of a process of disengagement (Alexander et al., 1997). Further they note that students at risk for potential dropout can be reliably identified as early as the third grade on the basis of their cognitive and behavioural engagement in school (Barrington and Hendricks, 1989; Lehr et al., 2004). Similarly, Kortering and Braziel (2008) point to the centrality of school engagement to school success and completion. Other studies find that perceiving an emotional connection to the school or teachers can be a protective factor that keeps at-risk children in school (Wehlage et al., 1989; Fredricks et al., 2004). Perhaps of particular importance, it has also been argued that engagement is relatively 'malleable, responsive to contextual features, and amenable to environmental change' (Fredricks et al., 2004, p. 59), offering an important area for intervention with children at risk of longer term educational underperformance.

As noted by Furlong and Christenson (2008), children's affective engagement with school is an internal indicator that is less observable than academic engagement or behavioural engagement. They note that student self-report measures are the most valid and reliable way to capture this type of engagement. In this context we draw on a number of self-reported responses reflecting children's affective engagement with school. We first focus on three measures of specifically affective engagement – whether children report that they like school, look forward to school and like their teacher; response categories for all measures are 'always', 'sometimes' and 'never'. Later in the chapter we examine other dimensions of engagement, namely whether children report that they like specific school subjects (Reading, Irish and Mathematics). These could be argued to reflect both affective and cognitive aspects of children's engagement. In each section we examine the extent to which engagement varies across students of differing social backgrounds, as well as other characteristics such as gender, immigrant status, family structure and whether the child has been identified with a special educational need (according to the definition derived from the EPSEN Act, as discussed in detail in Banks and McCoy, 2011).

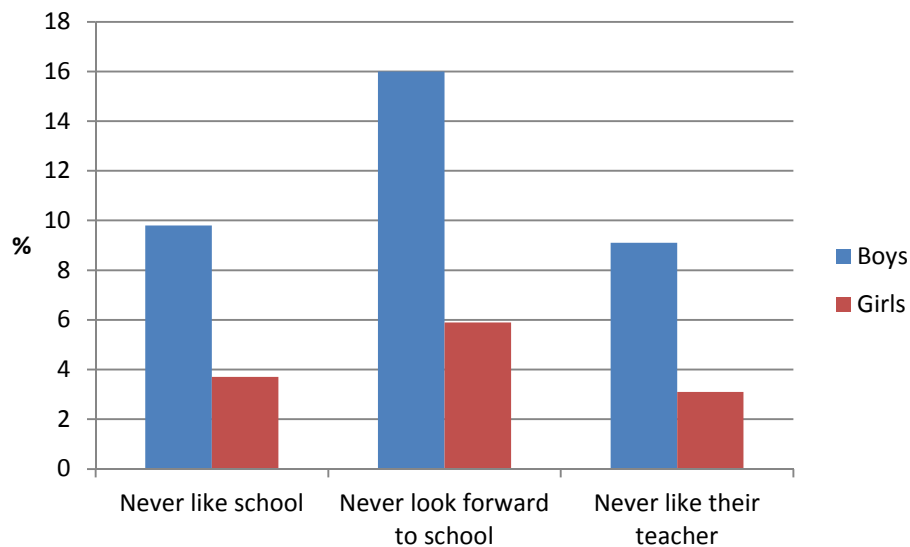
4.2 VARIATION IN CHILDREN'S ENGAGEMENT

The results show broadly high levels of engagement among primary school children, with the vast majority indicating that they like school (always or sometimes – 93 per cent), look forward to school (always or sometimes – 89 per cent) and like their teacher (always or sometimes – 94 per cent). When we examine levels of engagement across social class and income groups, we find largely comparable levels of engagement. For example, over 90 per cent of children from each of the income quintile groups report that they like school (sometimes or always). A similar result emerges when we consider parental educational level – the percentage of children reporting that they like school and their teacher does not vary significantly by level of mother's education. This is somewhat at odds with international research showing social differentiation in school engagement (see Smith et al., 1997 for example). However, the bulk of this research has been undertaken with second-level students, with much less research examining engagement at primary level.

The results from the *Growing Up in Ireland* study show important differences in school engagement among boys and girls, even at this relatively early age. In line with research elsewhere (Sirin and Rogers-Sirin, 2005), boys are significantly more likely to report that they never like school, never look forward to school and never like their teacher. Figure 4.1 shows the gender breakdown, with boys dominating the 'disengaged' group. To illustrate, while 6 per cent of girls respond that they never look forward to school, this is the case for one-in-six boys. Boys are two and a half times more likely to report that they never like school and three times more likely than girls to indicate that they never like their teacher. These results raise concern over boys' engagement with, and enjoyment of,

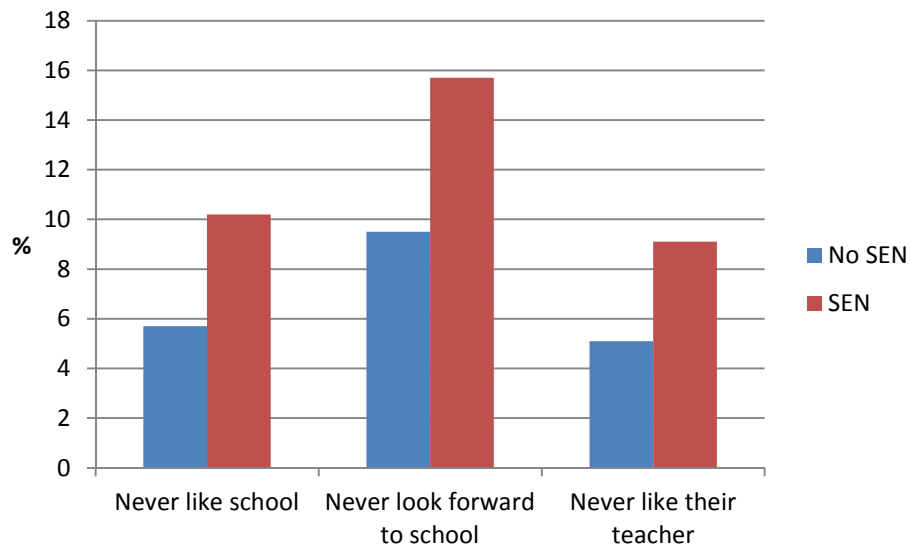
schooling, with a potentially detrimental impact on their longer-term educational development and performance.

Figure 4.1: *Percentage of children reporting that they never like school, never look forward to school and never like their teacher*



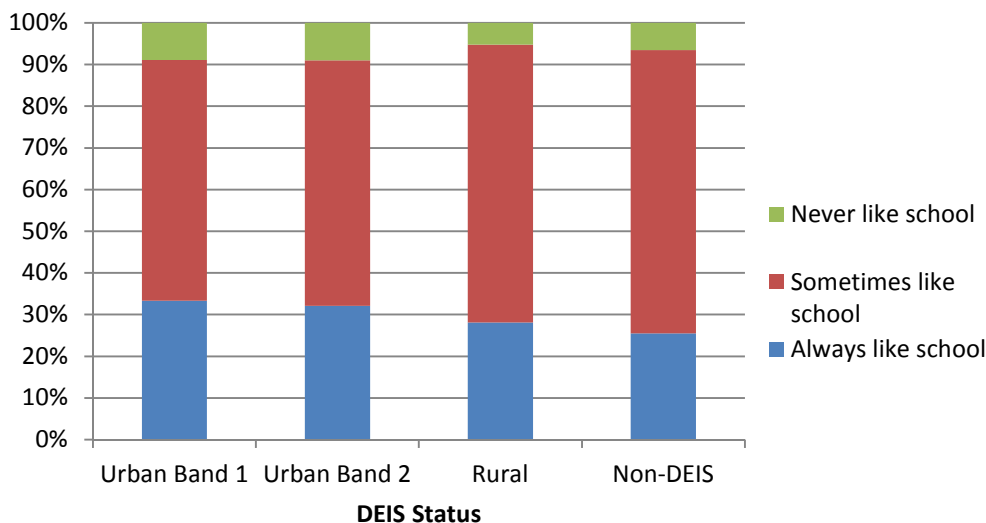
Alongside important gender differences in children’s engagement, the results also show that children with a special educational need (SEN) are significantly more likely to indicate that they never like school or their teacher. While nine per cent of children who are not identified with a SEN indicate that they never look forward to school, this is the case for 16 per cent of children with SEN (Figure 4.2). McCoy and Banks (2012, forthcoming) attempt to further understand the processes underlying the difficulties children with SEN face. They point to the need to move beyond the predominant focus on children’s academic engagement in understanding how children fare at school, to taking a more holistic approach looking at both academic engagement *and* social relations, both with teachers and peers.

Figure 4.2: *Percentage of children reporting that they never like school, never look forward to school and never like their teacher, by child's SEN status*



4.3 CHILDREN'S ENGAGEMENT ACROSS SCHOOL SETTINGS

Examining children's engagement across different school types and settings, for the most part we find little variation in engagement. As shown in Figure 4.3, children's reporting of the extent to which they like school does not vary substantially across DEIS and non-DEIS schools. However, there is some evidence that children attending fee-paying schools are less likely to never like school and never look forward to school, although small numbers mean that these results should be interpreted with caution. Children attending gaelscoileanna are also less likely to report that they never like school, although again small numbers point to the need for caution in the interpretation of these results. Given the gender differences shown above, it is not surprising to find that children attending boys' only schools are less engaged than children attending other school settings. It is interesting to note that the gender difference persists even in gender-mixed school settings: while one-in-ten boys in coeducational schools report that they never like school, this is the case for just three per cent of girls in these schools.

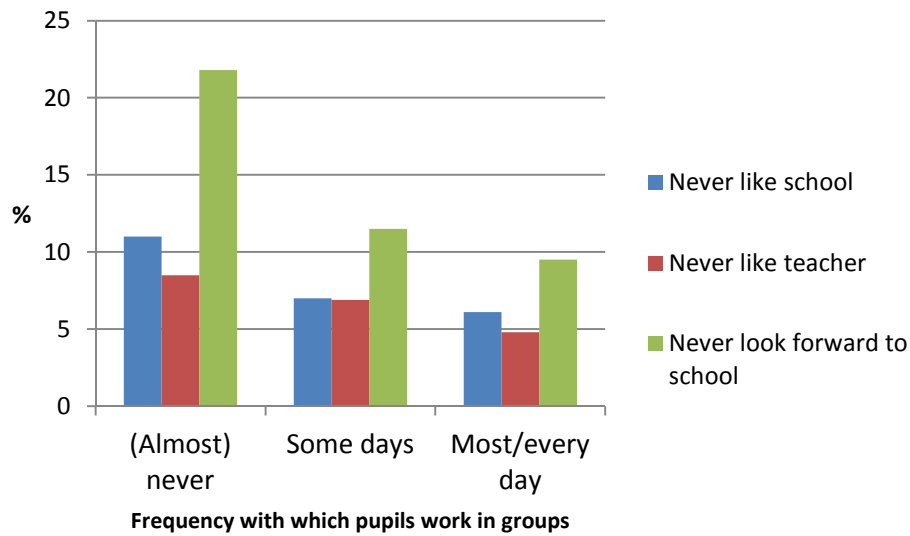
Figure 4.3: The extent to which children like school, by DEIS status

4.4 CHILDREN'S ENGAGEMENT AND TEACHING APPROACH

A number of studies point to the role of school and classroom factors in children's engagement. In particular, Newmann theorises that engagement in learning will be enhanced in classrooms where tasks are authentic, provide opportunities for students to assume ownership of their learning, provide opportunities for collaboration, permit diverse forms of talents and provide opportunities for fun (Newmann et al., 1992). Similarly, Guthrie and Wigfield argue that engagement in reading is enhanced in classrooms with interesting texts, real-world interactions, autonomy support, strategy instruction, opportunities for collaboration and teacher involvement (Guthrie and Wigfield, 2000; Fredricks et al., 2004). Among elementary, middle and high school US students, Marks (2000) also found that students' perceptions of the opportunities to be involved in authentic instruction were a strong predictor of engagement.

For the most part, the results suggest that children's engagement, at least at nine years of age, does not appear to be highly related to the approach taken by the teacher. However, there are a few notable exceptions. In particular, the results show that children appear to be more engaged where teachers employ group-work; nearly one quarter of children whose teachers never employ group-work report that they never like school. This compares to less than one-in-ten children who work in groups most days/every day (Figure 4.4). The direction of causality is not clear using just one wave of data, however. It may be that children are more engaged in classrooms where group-work is a common feature. Alternatively, teachers may be more reluctant to use group-work if they feel that children are already disengaged and may not therefore work productively in groups.

Figure 4.4: *Percentage of children who never like school, never like their teacher and never look forward to school, by frequency of group-work*



4.5 INFLUENCES ON SCHOOL ENGAGEMENT

This section looks at the simultaneous impact of child, family, school and teacher characteristics in shaping children's engagement with school. As in previous chapters, multilevel modelling is used to provide more precise estimates of the effects. Here we focus on predicting the likelihood of a child 'never' liking school, 'never' looking forward to coming to school and 'never' liking their teacher. The first issue to note is the relative absence of significant variation by social background factors (Table 4.1). While this may reflect the small size of the 'disengaged' group (see above), it is also clear that children with similar backgrounds have quite distinct experiences of school engagement. What is striking is the very significant gender differences found in school engagement. At the age of nine, boys are markedly more likely to never like school, never look forward to school and never like their teacher. These effects are large in size; boys are over three times as likely to report never liking school or never looking forward to it as girls with similar characteristics. The gender gap is similarly large in terms of attitudes to their teacher, with boys being 2.8 times to have negative views than girls, all else being equal. Research is increasingly concerned with whether the 'feminisation' of teaching may be playing a role in the growing educational disadvantage of males. In the Canadian context, Sokal and Katz (2008) examined the impact of male teachers and the use of computer-based books on third and fourth-grade boys' reading performance. However, they found that neither male teachers nor computer-based reading had a significant effect on boys' reading performance. Similarly, Neugebauer et al. (2011), drawing on large-scale data for Germany, found no evidence of a benefit from having a same-sex teacher for boys or girls. They conclude 'the popular call for more male teachers in primary schools is not the key to tackling the growing disadvantage of boys' (p.669). Additional analyses (not shown here) were undertaken to assess whether teacher gender played a role in boys' and girls' levels of affective

engagement. Consistent with the literature, we find that there is no significant difference in the engagement levels of boys with male and female teachers, all else being equal (Neugebauer et al., 2011).

A further striking finding is the greater school disengagement found among children who are deemed to have a special education need; they are around 1.5 times more likely than other children to fall into the disengaged group regardless of the measure used. McCoy and Banks (2012, forthcoming) further explore the processes underlying the difficulties encountered by children identified with special educational needs.

In contrast to the strong effects of gender and SEN, there is remarkably little variation in subjective school engagement by social background factors. Children whose mothers have degree-level or higher qualifications are less likely to have negative views about school but parental education has little impact on the other measures of disengagement. Children from lone parent families are somewhat more likely to never look forward to going to school but do not differ from children from two-parent families in relation to the other dimensions. Being from an immigrant family is associated with looking forward to school (with immigrant children being more positive on this dimension) but not with liking school or the teacher.

The analyses included a range of teacher and school characteristics. However, none of these effects are found to be significant. In other words, children in the same classroom or school context can have very different levels of engagement with schooling.

Table 4.1: Multilevel logistic regression model of factors influencing attitudes to school and teachers

	Never like school	Never look forward to school	Never like teacher
Constant	-3.206	-2.911	-3.258
<i>Individual characteristics</i>			
Gender (male)	1.146***	1.139***	1.048***
Social class:			
Professional	-0.229	-0.134	-0.377
Managerial	-0.250	-0.205	-0.419±
Non-manual	-0.089	-0.008	-0.076
Skilled manual	-0.142	0.178	0.006
Economically inactive	0.311	0.177	-0.039
Ref: semi/unskilled manual			
Mother's education:			
Upper secondary	-0.181	0.024	0.059
Post-secondary	-0.116	0.046	0.020
Degree	-0.483*	-0.010	-0.133
Postgraduate degree	-0.796**	-0.195	0.093
Immigrant student	-0.233	-0.367*	-0.214
Lone parent family	0.199	0.349*	0.096
Has special educational needs (SEN)	0.461***	0.486***	0.440***
<i>Teacher characteristics</i>			
Teacher gender (male)	0.214	0.069	-0.077
Teaching experience:			
3-5 years	-0.090	-0.166	-0.119
6-10 years	-0.184	-0.084	0.121
11-20 years	-0.346	-0.090	-0.273
21-30 years	-0.103	-0.120	0.014
>30 years	-0.289	-0.190	0.218
Ref: <2 years			
Use of active teaching methods:			
Medium level	0.004	0.140	0.020
High level	-0.065	0.055	-0.228
Ref.: Low level			
<i>School characteristics</i>			
Gender mix:			
Boys	-0.170	-0.087	-0.137
Girls	0.326	-0.176	0.036
Ref: Coed			
Language medium:			
Gaelscoil	-0.106	0.027	0.195
Gaeltacht	-0.400	-0.829	-0.449
Re: English-medium			
DEIS status:			
Urban band 1	0.309	0.228	0.064
Urban band 2	0.101	0.218	-0.664±
Rural	0.003	0.035	-0.358
Ref: Non-disadvantaged			

4.6 ATTITUDES TO SCHOOL SUBJECTS

Research on the attitudes of second-level students indicates that young people tend to have very positive views on English throughout their second-level career,

finding it interesting and useful and not finding it difficult (Smyth et al., 2011). Mathematics is generally seen as interesting and useful, but the perceived difficulty of Mathematics increases as students move through junior cycle and beyond. In general, Irish is seen more negatively by second-level students than other subjects, with only a minority seeing it as interesting or useful. However, little is known about attitudes among primary school children. International research from the PIRLS study indicates that, across very different countries, primary school (fourth grade) children are generally positive about reading, though this finding relates to overall attitudes both within and outside school (Mullis et al., 2007). As might be expected, children with the most positive attitudes tend to have the highest level of reading achievement. The broadly similar TIMSS study indicated positive attitudes to Mathematics among fourth-grade children across countries (Mullis et al., 2008). Research from England suggests that children’s attitudes to Mathematics are less positive than towards reading or school in general (Mortimore et al., 1988; Tymms, 2001). English research further indicates that attitudes to Mathematics decline with age (Mortimore et al., 1988; Albone and Tymms, 2004). This section explores children’s attitudes to Reading/English, Mathematics and Irish, allowing us to explore the extent to which later differences in subject attitudes have their origins in patterns at primary school level.

Figure 4.5 *Attitudes (‘always’, ‘sometimes’ or ‘never like’) to Reading, Mathematics and Irish by gender*

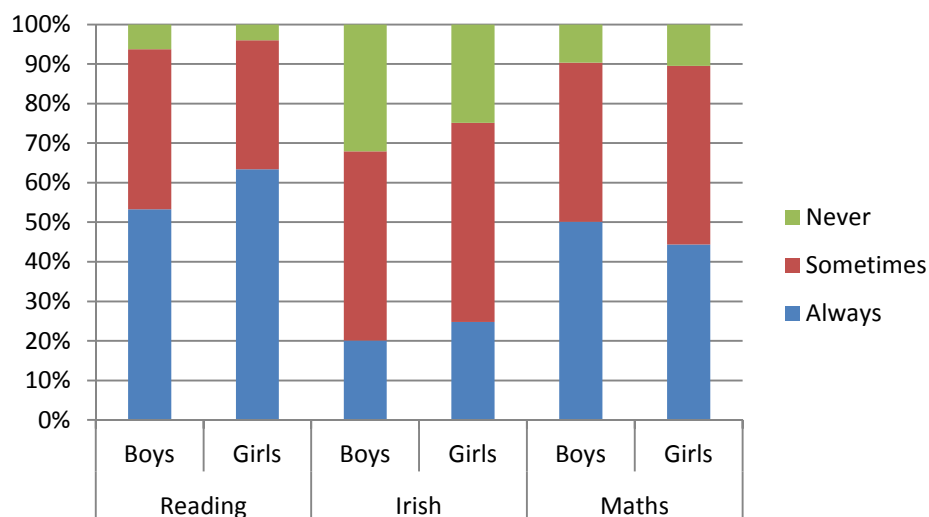


Figure 4.5 shows that 9-year-old children are more positive about Reading than the other two subjects, with the majority ‘always’ liking the subject. Attitudes to Mathematics are more finely balanced between positive views and ambiguous or even negative views. Views on Irish are the least positive, with only a fifth of children ‘always’ liking the subject. Furthermore, a third of boys and a quarter of girls report never liking Irish. Gender differences in subject attitudes are apparent; girls have more positive attitudes to Irish and especially to Reading while boys have more positive attitudes to Mathematics.

Figure 4.6: Attitudes ('always', 'sometimes' or 'never like') to Reading, Irish and Mathematics by mother's educational level

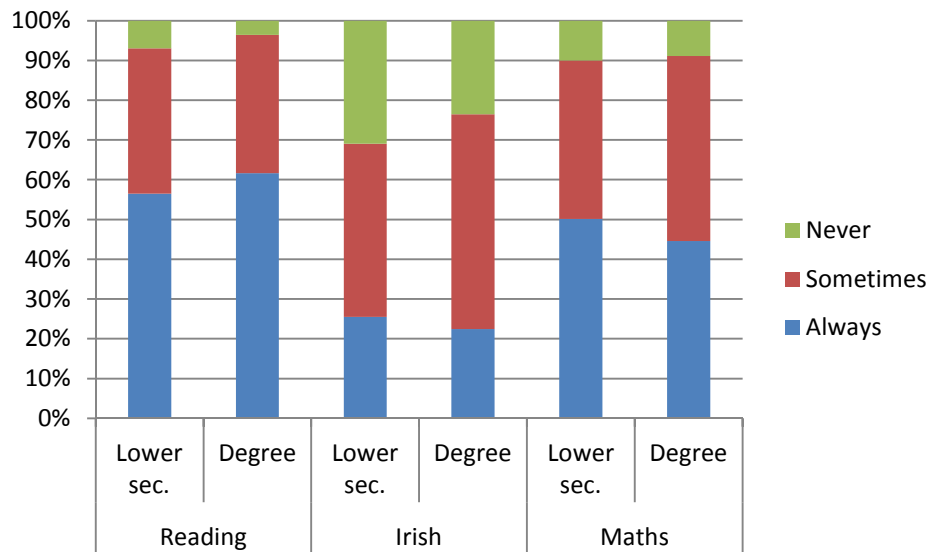
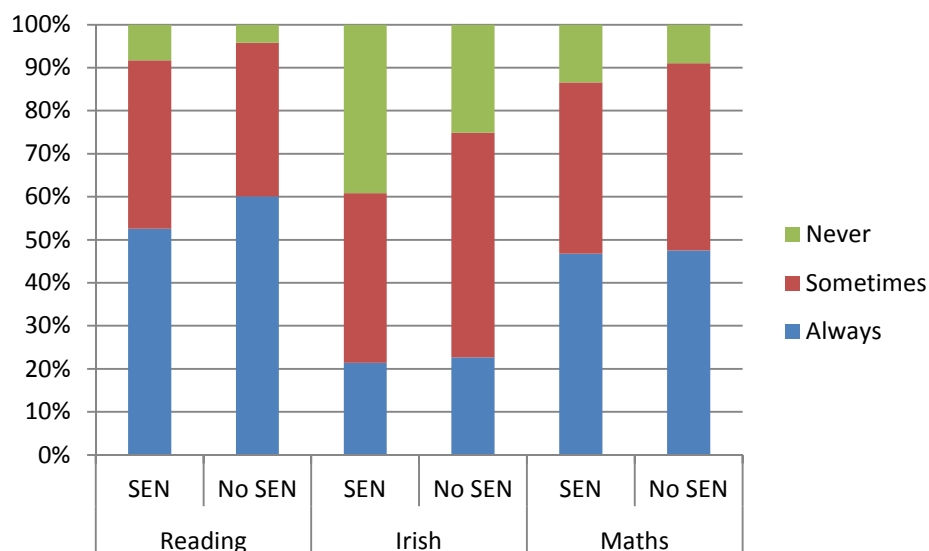


Figure 4.6 indicates some variation in subject attitudes by maternal education. For Reading, children whose mothers have degree-level (or higher) qualifications are more likely to say they 'always' like the subject than those whose mothers have lower secondary (or lower) qualifications. The pattern for Irish is quite different; here children with less educated mothers are more negative about the subject but are also more likely than those with graduate mothers to say they 'always' like it. For Mathematics too, children with less educated mothers are more polarised, being more likely to 'always' or 'never' like the subject. In keeping with Figure 4.6, children from professional and higher income families tend to have positive attitudes to Reading, but the differential found is relatively small. Attitudes to Irish are somewhat less negative among the professional/managerial groups than among other social classes.

Figure 4.7: Attitudes ('always', 'sometimes' or 'never like') to Reading, Irish and Mathematics by SEN status

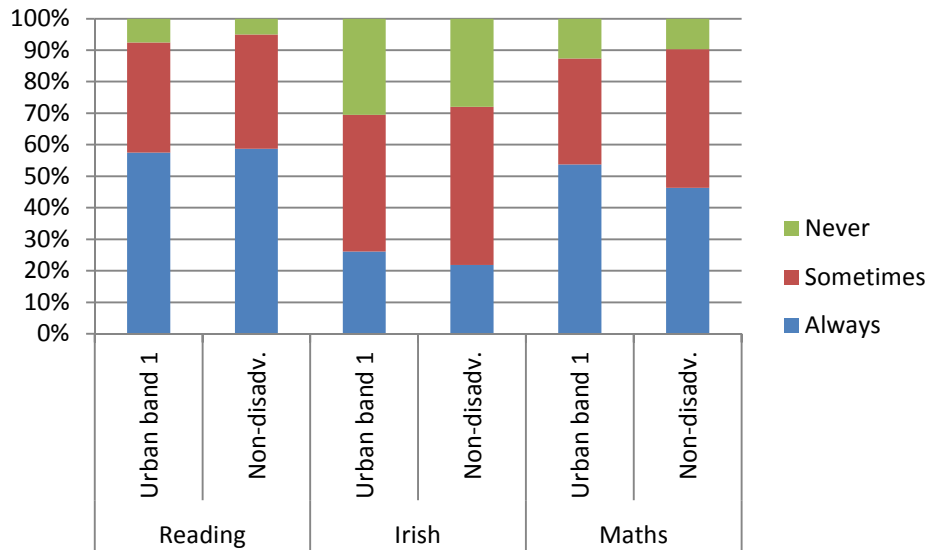


Children who have special educational needs are found to differ from their peers in their subject attitudes. Children without a SEN are more likely to 'always' like, and less likely to 'never' like, Reading. For Mathematics, differences between the two groups are less marked, with children with a SEN more likely to 'never' like the subject (Figure 4.7). Between-group differences in attitudes to Irish are more striking; 39 per cent of 9-year-olds with a SEN 'never' like Irish compared with 25 per cent of those without a SEN.

Variation in subject attitudes by teacher gender and experience was considered. Attitudes to Reading and Mathematics do not vary by teacher gender. However, children being taught by a male teacher tend to have somewhat more negative views on Irish; 33 per cent of those with a male teacher 'never' like Irish while this is the case for 28 per cent of those with a female teacher. This pattern is not due to the gender profile of children being taught by male teachers or to their representation in Irish-medium schools. There is little systematic variation in children's attitudes to subjects by the number of years' experience their teacher has. Attitudes to Reading or Mathematics do not vary by whether children are taught in a single- or a multi-grade class. However, children in multi-grade classes are slightly more negative about Irish than others; 20 per cent 'always' like it compared to 24 per cent in single-grade classes, while 30 per 'never' like it compared to 28 per cent in single-grade settings.

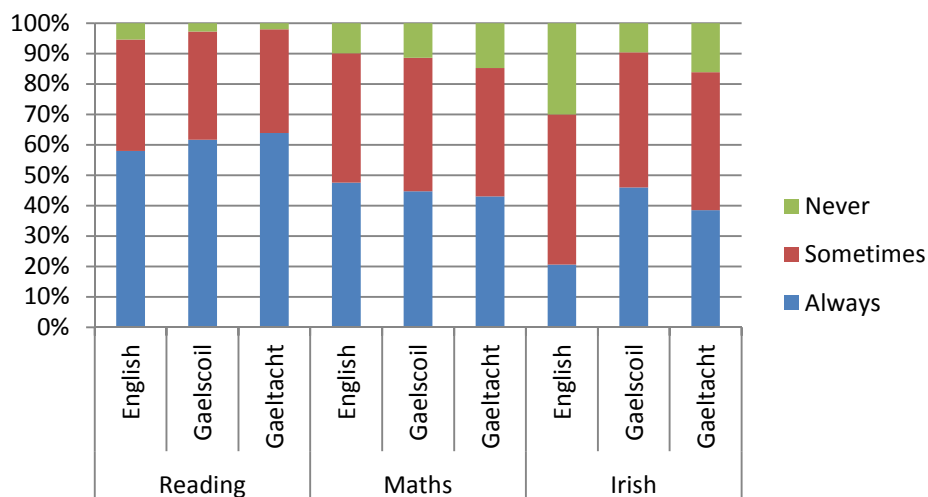
There are few differences by school DEIS status in attitudes to Reading, with children in urban band 1 schools only very slightly more likely than those in non-disadvantaged schools to 'never' like it (see Figure 4.8). For Irish and Mathematics, children in urban band 1 schools are more likely to 'always' or 'never' like the subject than those in non-disadvantaged schools. Interestingly, children in rural DEIS schools are found to have more negative attitudes to Irish than other groups.

Figure 4.8: Attitudes ('always', 'sometimes' or 'never like') to Reading, Irish and Mathematics by DEIS status of the school



Not surprisingly, children in Irish-medium schools are more positive about Irish than those in English-medium schools (see Figure 4.9), with the most positive attitudes evident among children attending gaelscoileanna. Interestingly, children attending Irish-medium schools, both gaelscoileanna and Gaeltacht schools, also have more positive attitude to Reading than those in English-medium schools. No variation is evident in attitudes to Mathematics by language medium of the school.

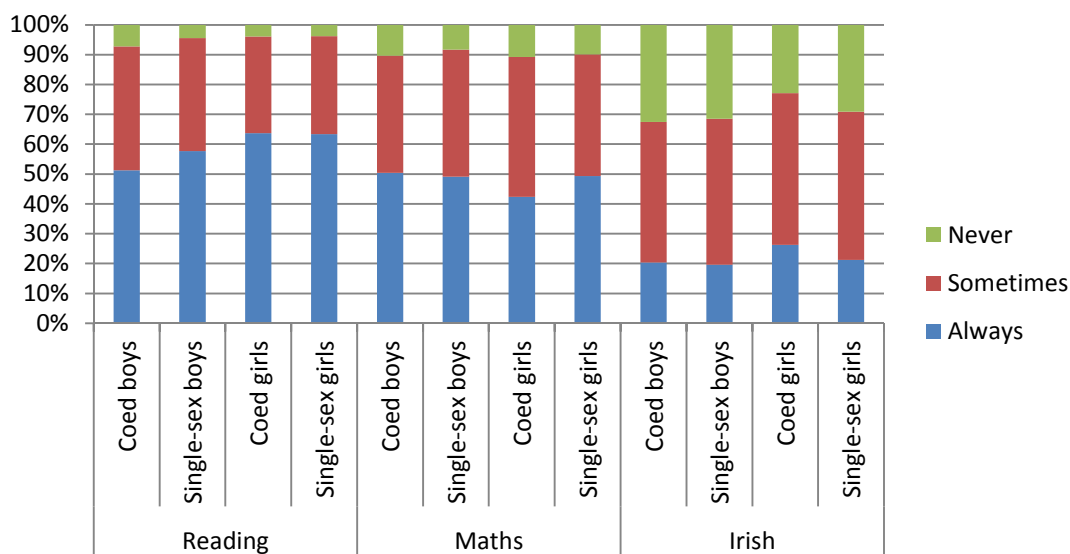
Figure 4.9: Attitudes ('always', 'sometimes' or 'never like') to Reading, Irish and Mathematics by language medium of the school



Analyses presented above point to gender differences in attitudes to the three subjects. Figure 4.10 looks at whether these differences are apparent across the coeducational and single-sex sectors. The most positive attitudes to Reading are found among girls, regardless of whether they attend a single-sex or coeducational school. Boys who attend single-sex schools have somewhat more positive attitudes to Reading than those in coeducational schools. The pattern for

Irish is broadly similar, with attitudes reflecting the child’s gender rather than the gender mix of the school they attend. However, girls in single-sex schools are somewhat more negative about Irish than those in coeducational schools. The analysis above indicated gender differences in student attitudes to Mathematics. Looking at the pattern by gender mix of the school reveals a more complex pattern. Single-sex girls resemble boys (in either single-sex or coeducational schools) in their attitudes to Mathematics while girls in coeducational schools have more negative attitudes to Mathematics than any other group.

Figure 4.10: Attitudes (‘always’, ‘sometimes’ or ‘never like’) to Reading, Irish and Mathematics by gender and gender mix of the school



It should be noted that differences in attitudes by school characteristics will also reflect differences between different types of schools in their pupil intake. In the following subsection, the use of multivariate modelling allows us to examine the impact of school characteristics, net of differences in student background.

4.6.1 Influences on Attitudes to School Subjects

Multilevel modelling was used to explore the child, teacher and school factors influencing attitudes to Reading/English, Mathematics and Irish. Significant gender differences are evident in relation to the two languages; boys are more than twice as likely as girls to ‘never’ like Reading and 1.6 times more likely to have negative attitudes to Irish (Table 4.1). In contrast, no gender differences are apparent in attitudes to Mathematics, all else being equal. As with general school engagement, children with special educational needs have significantly more negative attitudes to Reading, Mathematics and Irish, and the differential is greater for the languages than for Mathematics. There is relatively little family background variation in subject attitudes. However, children whose mothers have less than upper secondary education have more negative attitudes to Reading. In addition, children whose mothers have postgraduate education have the least negative attitudes to Irish. Children from lone parent families have more negative

views than other children on Mathematics and Irish, but no such difference is evident for Reading. Children from immigrant backgrounds are more positive about Mathematics than other children but the two groups do not vary in their attitudes to Reading and Irish.

There is markedly little variation in subject attitudes by teacher characteristics. Teacher gender, years of experience and use of active teaching methods are not significantly associated with views on the three subjects. Time allocation is not significantly related to attitudes to Reading or Irish. The pattern for Mathematics is a little puzzling: children whose teachers spend more time on Mathematics are less positive about the subject. This pattern is likely to reflect that teachers whose students struggle with Mathematics are likely to spend more time on it rather than being a causal effect of time allocation.

There is tentative evidence that boys attending single-sex schools have somewhat more positive attitudes to the three subjects than boys in coeducational schools, though the effects are of borderline significance. Furthermore, girls attending single-sex schools have more positive attitudes to Mathematics and more negative attitudes to Irish than their coeducational counterparts. Further analysis, perhaps using later waves of the *Growing Up in Ireland* study, would be needed to unpack whether this is a causal effect since the single-sex sector is likely to be highly selective in other ways (see Hannan et al., 1996, on the selective profile of the, much larger, second-level single-sex sector). However, the finding for Mathematics is consistent with some international research, which indicates less gendering of mathematical and scientific subjects within single-sex schools (see, for example, Rowe, 1988). Not surprisingly, children attending gaelscoileanna have more positive attitudes to Irish than those in English-medium schools. Interestingly, however, no significant differences are found between Gaeltacht and English-medium schools in attitudes to Irish. Finally, attitudes to the three subjects do not vary between DEIS and non-disadvantaged schools.

Table 4.2: *Multilevel logistic regression model of factors influencing attitudes to Reading, Mathematics and Irish, contrasting ‘never like’ with ‘always/sometimes like’*

	Reading	Maths	Irish
Constant	-3.434	-3.046	-1.390
<i>Individual characteristics</i>			
Gender (male)	0.758***	-0.094	0.477***
Social class:			
Professional	-0.129	0.020	0.092
Managerial	-0.162	-0.044	0.022
Non-manual	0.188	-0.237	0.128
Skilled manual	0.005	-0.117	0.282*
Economically inactive	-0.143	-0.079	0.015
Ref: semi/unskilled manual			
Mother’s education:			
Upper secondary	-0.357±	0.292*	-0.026
Post-secondary	-0.491*	0.116	-0.169
Degree	-0.480±	0.072	-0.155
Postgraduate degree	-0.585±	-0.057	-0.315*
Immigrant student	-0.066	-0.367±	-0.001
Lone parent family	0.106	0.273±	0.264*
Has special educational needs (SEN)	0.649***	0.363**	0.525***
<i>Teacher characteristics</i>			
Teacher gender (male)	-0.071	-0.013	0.143
Teaching experience:			
3-5 years	-0.417±	-0.007	-0.120
6-10 years	-0.293	-0.124	0.009
11-20 years	0.067	-0.061	0.116
21-30 years	-0.496*	0.041	0.008
>30 years	0.077	-0.293	-0.075
Ref: <2 years			
Time spent on subject	0.091	0.175**	-0.011
Use of active teaching:			
Medium level	-0.091	0.155	0.118
High level	0.011	0.124	0.037
Ref: low level			
<i>School characteristics</i>			
Gender mix:			
Boys	-0.390±	-0.284±	-0.187±
Girls	-0.058	-0.343*	0.264*
Ref: Coed			
Language medium:			
Gaelscoil	-0.322	0.197	-1.280***
Gaeltacht	-0.815	0.189	-0.400
Re: English-medium			
DEIS status:			
Urban band 1	0.148	0.289	-0.004
Urban band 2	-0.279	0.159	-0.059
Rural	-0.478	0.101	0.018
Ref: Non-disadvantaged			

4.7 SUMMARY

The results show broadly high levels of engagement among Irish primary children, with only a small minority indicating that they do not like school, do not like their

teacher or do not look forward to school. That said, certain groups of children are at much greater risk of disengagement even at the relatively young age of nine years. In line with research elsewhere, boys are much more likely to report low levels of affective engagement with school. Children with special educational needs are also likely to respond with low levels of affective engagement, which recent research (McCoy and Banks, 2012, forthcoming) suggests stems from both academic engagement and social relations in the school context.

When we consider attitudes towards English, Irish and Mathematics, we find important differences in attitudes across subject areas and across different groups of students. Students are most positive about English, while views on Irish are least positive. Girls have more positive attitudes to the two literacy subjects than boys. Further, children with special educational needs have much more negative attitudes to all three subjects. While the results show that gender mix of the school bears a relationship to student attitudes, with more positive attitudes among boys in single-sex schools, student attitudes do not vary across other school characteristics like DEIS status. As might be expected attitudes towards Irish are more positive among children attending gaelscoileanna, although no significant differences are found between Gaeltacht and English-medium schools in attitudes towards Irish.

Much of the international research points to the serious implications of disengagement for educational development in the short-term and for longer-term outcomes. A wealth of studies point to the centrality of school engagement for academic achievement, and other outcomes like delinquency, aggression and early school dropout (Fredricks et al., 2004; Hill and Werner, 2006; Jimerson et al., 2003; Simons-Morton, 2004; Sinclair et al., 2003; Perdue et al., 2009). However, analysis of PISA data also shows that there is considerable variation among countries in levels of student engagement⁵ and in the prevalence of disaffected students at secondary level. Further, this analysis indicates that literacy performance and student engagement do not necessarily go hand-in-hand, a finding which has emerged in some international studies, which indicate a significant number of students with a strong literacy performance who are nevertheless disaffected from school (Willms, 2003).

⁵ The measure of engagement in this research has two dimensions: a student's sense of belonging and school attendance.

Chapter 5

Summary and Conclusions

5.1 SUMMARY OF MAIN FINDINGS

The Primary Curriculum (1999) has now been in place for more than a decade but relatively little is known about how the aims of the curriculum have been translated into classroom practice. The *Growing Up in Ireland* study provides a unique opportunity to examine the school and classroom experiences of primary school children, placing these experiences in the context of very detailed information from school principals and classroom teachers. This report draws on the first wave of the *Growing Up in Ireland* study, examining the lives and experiences of one-in-seven 9-year-old children in Ireland. Drawing on Bronfenbrenner's perspective (Bronfenbrenner et al., 2006), the study provides a unique opportunity to consider the multifaceted and multilayered influences on children's development. Combining detailed information from parents, school principals and teachers as well as, crucially, children themselves, this report addresses a number of important themes in Irish primary education. Chapter 2 assesses the allocation of time to different subject areas. This is followed by an examination of the approaches and strategies teachers adopt in teaching 9-year-olds in Chapter 3. Chapter 4 examines children's engagement in school, an important predictor of longer-term educational outcomes.

In examining the allocation of time to different subject areas, it appears that teachers are adjusting their class timetable to reflect the perceived needs of their student intake, focusing more on core literacy skills and also on personal-social development among more disadvantaged groups. This is very much in keeping with the objectives of the DEIS programme. The gender-mix of the school and its language medium were also associated with a distinct pattern of time allocation in the classroom. Thus, children attending gaelscoileanna are more likely to experience a broad curriculum and spend more time not only on Irish but also on Music, Art and PE. Boys in single-sex schools are found to spend more time on History, Geography and PE than those in coeducational schools. For girls, being in a single-sex school means spending more time on RE. There are also differences across teacher characteristics, particularly gender and the length of teaching experience, in the allocation of time to different subject areas. In particular, more experienced teachers are found to devote greater amounts of time to a 'core' curriculum which emphasises English, Irish and Mathematics.

The findings in relation to teaching approaches adopted by teachers suggest that, all else being equal, more recently qualified teachers place a greater emphasis on more active teaching methodologies, with this emphasis declining with the length of teaching experience. While this finding may reflect, in part, the monitoring of teachers in their diploma year, it also suggests an important shift in teacher

training methodologies over time. The results also indicate that teachers are likely to take different approaches with different student groups – with a stronger emphasis on active teaching approaches in single-sex girls’ schools and fee-paying private schools, and more traditional approaches more prevalent in DEIS schools. It was of particular interest that class size seems to matter for the types of approaches teachers take, with smaller class groupings appearing to allow teachers greater opportunity to take more active teaching approaches.

Finally, the results show high levels of affective engagement among Irish 9-year-olds. However, levels of engagement were substantially lower among two student groups: namely, boys and children with special educational needs (as defined in the EPSEN Act, see Banks and McCoy, 2011). In relation to student attitudes towards the core subjects, English, Irish and Mathematics, there is some evidence of more positive attitudes towards the languages among girls, more positive attitudes towards Mathematics among girls in single-sex schools and more positive attitudes towards all three subjects among boys in single-sex schools as compared to coeducational settings. Perhaps not surprisingly, children attending *gaelscoileanna* indicated more positive attitudes towards Irish; however, children in *Gaeltacht* schools did not.

5.2 IMPLICATIONS FOR POLICY

The Primary Curriculum (1999) presented a strong vision of child-centred education, with children viewed as active agents in their own learning. To what extent is this vision matched by the reality? Findings in this report provide the first systematic evidence that whole-class teaching continues to be the dominant approach used in primary classrooms, reinforcing the findings of earlier studies which drew on different data sources (Murphy, 2004; NCCA, 2005, 2008). The current study goes further by documenting the way in which access to more active learning methods varies by teacher characteristics and classroom setting. Variation by teacher experience suggests that initial teacher education has contributed to the greater use of active methodologies in the classroom among more recent cohorts of graduates. Less use of such methods among more experienced teachers suggests that continuous professional development in support of the Primary Curriculum has not led to a change in pedagogical approaches among this group. These findings point to the need for targeted professional development to support teachers in utilising a range of pedagogies (see Murphy, 2004). More active methods are much less prevalent in larger classes, indicating the constraints of class size on the effective implementation of the primary curriculum. It is of policy concern too that some groups of children, namely, girls, those attending fee-paying schools, those attending *gaelscoileanna* and those in non-disadvantaged schools, have greater access to the kinds of active methods which may engage them in learning. Couched differently, boys and children from disadvantaged backgrounds, groups with lower levels of achievement later on in the school system, are less likely to experience active and engaging settings for learning. The reasons for such differences are unclear from

the data available here, but may reflect group-work and pair-work being seen as 'easier' to manage with more engaged groups of students.

The Primary Curriculum (1999) emphasises flexibility at the school and classroom level for teachers to address the needs of their students. While such flexibility is crucial for effective teaching and learning, there is potential for differences to emerge which may negatively impact on longer term educational outcomes. For example, the findings point to significant variation in the time allocated to particular subject areas, including Mathematics. In the longer term, this may translate into differences in student engagement and achievement in particular domains. In keeping with the findings on teaching methods, more recently qualified teachers are found to provide a broader curriculum with more experienced teachers spending more time on the 'core' areas of English, Irish and Mathematics. The findings highlight the important role of initial teacher education, which has undergone significant change and restructuring in recent years. It appears that such changes have led to a significant shift in the relative emphasis on different teaching approaches and curricular areas over time. The results also indicate the important role to be played by continuous professional development for primary teachers in supporting curriculum implementation. The additional hours allocated to non-class contact time under the Croke Park Agreement (2011) may provide the space within which teachers can share experiences of using different teaching methods and an opportunity to engage in continuous professional development to reflect school needs. Such professional development is necessary to ensure that all primary school children have access to a broad and balanced curriculum.

A significant contribution of the *Growing Up in Ireland* study is its insight into children's own perspectives on schooling. Policy-makers dealing with minors are increasingly recognising the value of talking and listening to children about the issues that concern them directly (in accordance with the United Nations Convention on the Rights of the Child, Article 12). Nine-year-old children are found to be broadly positive about school and about their teachers. However, it is of policy concern that even at this early stage boys are more likely to be disengaged from school and to be more negative about literacy-based subjects than girls. Even more striking are the significant disengagement levels found among children with special educational needs, raising issues for policies around inclusion at primary level (which is further addressed in McCoy and Banks, 2012, forthcoming). The findings also point to the emergence of more negative attitudes to Irish than to Reading and Mathematics among children, even at this early stage.

In conclusion, the *Growing Up in Ireland* data provided a rich evidence base for analysing the way in which the Primary Curriculum is implemented in the classroom. It has important implications for the Department of Education and Skills Literacy and Numeracy for Life strategy document, published in 2011; for teacher education programmes; for the DEIS programme; for curricular and school organisation policy; and for policy on the inclusion of students with special

educational needs. The findings have relevance for all of the key stakeholders in education, including the NCCA, the Teaching Council, the Professional Development Service for Teachers (PDST), the Department of Education and Skills Inspectorate (Primary), the NCSE, school principals and parents. Later waves of the study will provide detailed information on the way in which primary experiences influence the transition to second-level education and beyond.

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Appendix A

Teaching Methods Question

Please indicate how frequently the following things happen in the Study Child's class [never/almost never, some days, most days and every day]:

1. Pupils copy notes from the board in class
2. Pupils work in pairs
3. Pupils work individually in class using their textbook or worksheets
4. Homework is checked in class
5. Homework is taken up for correction
6. Pupils work in groups in class
7. You ask pupils questions in class
8. Pupils ask you questions in class
9. Pupils ask each other questions in class
10. You read aloud to pupils
11. Pupils suggest subjects or topics to be covered in class
12. Pupils are encouraged to find things out for themselves
13. You use video/DVD or audiotapes/CDs in class
14. You use play to facilitate pupil learning
15. Pupils use computer facilities in class
16. You provide differentiated activities, as appropriate, to pupils
17. Pupils get the opportunity to engage in hands-on activities
18. The pupil's experience and their environment is the starting point for learning
19. You teach pupils as a whole class

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