Chapter 1. Background, International Reports, and Issues in Literacy Instruction

In this chapter, a brief overview is provided of the reading literacy study which was carried out in 1990-91 in 32 educational systems throughout the world under the auspices of the International Association for the Evaluation of Educational Achievement (IEA). Following that, the results of the international reports based on data collected in the study are summarized. Some earlier relevant research from Ireland is then reviewed. Finally, some of the major issues in current research on reading and literacy instruction are set out to provide a context for interpreting the Irish results of the IEA study.

THE IEA READING LITERACY STUDY

The first IEA international survey of reading was a study of 10- and 14-year olds in 15 countries (Thorndike, 1973). One of its major findings was that home background and the number of books in students' homes were among the most important factors predicting students' reading achievements. Shortly after publication of the report of the study, it was suggested that there was a need to look at the achievements of younger children who had just acquired the basic skills of literacy.

This consideration was one of the factors that influenced the selection of 9-year olds as one of the target populations in the 1990-91 reading literacy study. As it was also thought appropriate to select a population nearing the end of compulsory schooling, a decision was made to measure the literacy performance of 14-year olds. The survey was conducted on representative samples of 32 educational systems. Samples ranged in size from 1500 to 3000 9- and 14-year old students. Altogether, 10,500 teachers and slightly less than 200,000 students took part (Table 1.1).

The main aims of the IEA reading literacy study were as follows: (i) to identify the factors that are important in learning to read, (ii) to indicate the level of reading to be expected from the next generation, (iii) to describe the voluntary reading activities of 9- and 14-year olds, (iv) to identify policies and practices in reading in various countries and to study the ways in which these relate to students' achievement and to their voluntary reading, (v) to produce valid international tests and questionnaires which could be used to investigate reading literacy development in several countries, (vi) to provide national baseline data suitable for monitoring changes in reading literacy levels and patterns over time,

and (vii) to determine the average levels of reading literacy of representative samples of students (Elley, 1992, p. 3).

TABLE 1.1

NUMBERS OF PARTICIPATING TEACHERS AND STUDENTS, BY STUDENT AGE LEVEL AND COUNTRY

Country	9-year olds		14-year olds	
	Number of teachers	Number of students	Number of teachers	Number of students
Belgium (French)	152	2708	145	2733
Botswana	—	—	274	4763
Canada/BC	161	2731	220	4889
Cyprus	319	1511	248	1422
Denmark	209	3543	207	3913
Finland	71	1552	83	1379
France	136	1865	136	2618
Germany/East	101	1983	100	1963
Germany/West	150	3106	197	4521
Greece	175	3609	147	3942
Hong Kong	167	3313	158	3160
Hungary	144	3010	144	3374
Iceland	283	4035	221	3855
Indonesia	174	3169	—	—
Ireland	122	2714	151	3643
Italy	154	2242	179	3089
Netherlands	99	1706	162	3748
New Zealand	176	3027	124	3135
Nigeria	—	—	122	2374
Norway	191	2487	138	2307
Philippines	—	—	244	9708
Portugal	167	2808	163	3429
Singapore	206	7399	142	4805
Slovenia	140	3300	139	3230
Spain	324	8230	318	8485
Sweden	234	4347	149	3669
Switzerland	227	3435	387	6520
Thailand	—	—	141	2749
Trinidad/Tobago	248	3684	208	3027
USA	300	6729	165	3476
Venezuela	162	4716	171	4326
Zimbabwe	—	—	143	2768
Total	4992	93,049	5526	100,365

For purposes of the international study, reading literacy was defined as '...the ability to understand and use those written language forms required by society and/or valued by the individual' (Elley, 1992, p.3). Writing ability was excluded and only minimal writing demands were made in the tests. The domains of literacy which were assessed at both age levels were: (i) Narrative domain (continuous text in which the writer's aim is to tell a story, whether fact or fiction), (ii) Expository domain (continuous prose designed to describe, explain, or convey factual information), and (iii) Documents domain (stuctured information presented in the form of charts, tables, maps, or sets of instructions).

Particular efforts were made in the construction of tests to encompass the variety of experiences that children would encounter as well as to ensure that relevant cognitive capacities were tapped. Thus, a range of themes and topics covered areas relevant to home, school, society, and work. Furthermore, the cognitive processes tested ranged from literal comprehension to inferences and generalizations.

Efforts were made to ensure that the measuring instruments represented the reading curriculum in as many countries as possible. To achieve this, countries were invited to submit questions for inclusion in the international test and most of them did. Thus, the test represents a consensus of what students in different countries can be expected to do at ages 9 and 14 years (see Chapter 2).

While the IEA recognized the value of open-ended test items, the decision to use mainly a multiple-choice format was based on grounds of objectivity, ease of scoring, and the fact that both open-ended items and multiple-choice items had been found to measure essentially the same abilities. Tests were translated into local languages according to guidelines provided by a steering committee. Two parallel translations of the tests and back translations on samples of the passages were made. Minor cultural adaptations were permitted to allow for suitable place names, local currencies, and measurement units.

Each scale (narrative, expository, and documents) was assigned a mean score of 500 and a standard deviation of 100. The use of item response theory in the analysis of scores was intended to allow for the exclusion of items from analyses in particular countries without compromising the comparability of achievement measures across countries.

One of the advantages of this type of study is the opportunity it presents to investigate factors related to reading at individual student level, at class and school levels, as well as at national level. Questionnaires were designed to obtain information related to reading at each level: (i) a student questionnaire obtained information on students' home and school circumstances, (ii) a teacher questionnaire obtained information on teachers' background, instructional

practices, and beliefs, (iii) a school questionnaire obtained information on school circumstances and policies as perceived by the principal, and (iv) a national questionnaire obtained information on national policy, enrolment patterns, and economic conditions.

A peculiar feature of international studies is that they provide an opportunity to explore possible effects of the natural variation in conditions that occurs between countries. While variation exists within countries, the acceptance of traditional policies and practices tends to bring about uniformity in conditions related to instruction such as class size, length of school day, and initial and inservice teacher education, in all of which one is likely to find considerable variance between countries. Obviously, a consideration of variation within countries is also of interest. For example, if access to books is found to be important in differences *between* countries, is it also found to predict differences between schools *within* countries?

THE INTERNATIONAL REPORTS

A number of reports which draw on data collected in all the countries that participated in the survey have been published. The first was Elley's (1992) report, *How in the world do students read?* The identification of factors associated with effective schooling is the focus of the report by Postlethwaite and Ross (1992), while the main aim of the report of Lundberg and Linnakylä (1993) was to describe the teaching of reading in different countries and to identify the conditions, strategies, and activities associated with children's achievement in literacy. Since these studies provided the context for the present report, some of their main conclusions will be summarized.[1]

Cross-National Comparisons

Elley's (1992) international report takes as its point of departure the very different beliefs, policies, and practices regarding the teaching of reading that prevail in the 32 countries in the survey. For example, in some countries the

1 A recently published volume by Elley (1994) summarizes the main findings of the IEA literacy study, particularly those published in the earlier reports by Elley (1992), Postlethwaite & Ross (1992) and Lundberg & Linnakylä (1993). In addition, the beginnings of a multivariate analysis of the data from Population A (9-year olds) are to be found in a chapter in a book by Munck & Lundberg (1994).

teaching of phonics is central while teachers in other countries take a 'whole language' approach to reading. There are many countries in which graded reading schemes form the central core of materials for reading, while in others children are exposed to the 'real book' approach. For many of the educational variables investigated, there is some variation within countries (including the two examples above), while for other variables there is little or no variation. For example, there is little variation within countries in matters such as age of beginning formal reading or in length of teacher training, teacher qualifications, or length of school year. With respect to some variables (that may be of special relevance to literacy), there is no variation within countries. One such example is the phonetic regularity of the language in which children are instructed.

Elley divided the factors relevant to reading achievement into two categories: (i) *General Social and Developmental Factors*, devised from indicators of the general level of social and economic development in each country and considered largely beyong the control of educators and (ii) *Educational Variables* (educational policies and practices).

Indicators of General Development were combined to form a *Composite Developmental Index* (CDI). These indicators are similar to those that might be obtained in any study of national development, viz., per capita GNP, public expenditure per student on education, life expectancy, percentage of children born with low birth weight, newpspaper circulation, and percentage of adults with literacy problems. Indicators such as life expectancy and percentage low-birth weight are indirect measures of general physical health and are included on the grounds that if schools are to be successful, they should not be hampered by undue levels of sickness or malnutrition. The use of indicators of newspaper readership and rates of adult literacy is a reflection of the value placed on literacy by the general population. While these national indicators involve health and economic factors as well as literacy factors, they are basic dimensions of national development and are likely to provide indirect support to the promotion of literacy levels in schools in addition to the quality of teaching programmes, which they can support. Thus, countries with a high GNP can afford to pay more for teachers, for back-up services, and for better resources in schools.

The approach taken to gauge the effectiveness of the various educational systems was to examine the extent to which the average score in each country was better or worse than would be predicted on the basis of the CDI for each country. This gives rise to two kinds of comparison which focus on the following questions: How does the country compare with other countries? How does the

actual score of the country compare with the score that might be expected on the basis of its level of national development?

In examining the effects of various educational variables, it became clear that many were related to the Composite Developmental Index. Because of this, the report also presents a comparison of the association between educational variables and achievement in literacy, *having controlled for general development, i.e., the CDI.* This approach guided the description of all of the educational variables examined. The uncontrolled association between achievement and the variable is first set out, while a subsequent analysis identifies the association, having controlled for general development.

As might be expected, the picture that emerges from such analyses is not easily interpreted for all the educational variables. This is because an association may be found between an educational variable and mean country achievement when general development is not controlled, but the assocation may disappear once that type of control is applied. Another difficulty is that the association may emerge for students of a particular age but not for students at another age. Furthermore, even when the results are consistent for some variables, they may not be easily interpreted.

However, for a number of variables the results are especially clearcut and consistent. For both 9-year olds and 14-year olds, there was an association between having large school libraries and mean achievement scores. In other words, students in those countries that have relatively large school libraries tend to do rather better than students in those countries where this is not the case. Given that more prosperous countries would tend to have larger libraries and also to have better reading scores, it is noteworthy that the relationship was still signficant after controlling for level of general development.

A similar pattern of results emerged in relation to teacher education. The relevant variable that was found to be signficantly associated with mean achievement score was years of teacher education. Countries in which mean achievement scores were in the top ten tended to have teachers who had spent significantly longer in education than countries which were in the bottom ten. The association between years of teacher education and student achievement remained significant when allowance was made for economic development.

Many of the variables that emerged as significant relate to material resources especially access to books. For example, in countries in which 9-year olds score high there is a tendency to borrow more books from the library (a relationship that holds after controlling for general level of development). Similarly, for 14-year olds, level of resources for reading (e.g., having a library, student reading room, student newspaper, drama club) is strongly associated with reading

achievement and this association is even stronger when level of general development is taken into account.

While the results are quite clearcut in relation to these variables, the outcomes relating to some other variables indicate how difficult it is to isolate the effect of a single variable. Class size for 9-year olds ranged from an average of between 16 and 18 in Italy, Norway, and Denmark to 36 in Hong Kong and 38 in Singapore. A straightforward comparison showed virtually no difference between high and low-scoring countries on this variable. When adjustments are made for general development, countries with *larger* classes fare better. This difference is largely due to the effects of two Asian countries, Hong Kong and Singapore; when these are eliminated, the difference disappears. These results show that differences in class size across countries are associated with other factors that may mask any effects that might flow from the differences. In many cases, it would seem that other factors are stronger in their effects on achievement than is class size. Thus, at the very most, the results show that class size is only one of the many factors that influence average pupil achievement in literacy.

Effective Schools Within Countries

Elley's (1992) report focused on differences *between* countries and the various factors that may be associated with such differences. The study also allows for comparisons *within* countries and this is the approach taken in the report by Postlethwaite & Ross (1992), who focused on the question why some schools are 'better' than others in particular countries. Specifically, they sought to identify the characteristics of effective schools within countries.

Following the tradition of the literature in this area, Postlethwaite & Ross adopted an index of school effectiveness based on the difference between a school's actual average achievement score and the score that would be predicted from a knowledge of student characteristics and the 'hard to change' conditions surrounding the school. In other words, the index of school effectiveness was based on whether the average achievement in a school was higher or lower than would be expected given the home circumstances of the students attending the school.

The basic strategy was to identify two groups of schools, one group (more effective schools) in which the average student reading score was higher than would be expected given the home circumstances of students and another group (less effective schools) in which the mean level of student achievement was lower than expected. It was not possible to assess home circumstances in terms of variables which are frequently used for this purpose (e.g., parents' occupational status, income level, or educational attainment), since information

was not collected on these variables. Information was, however, obtained on the number of books in students' homes, and this was the variable adopted to represent home circumstances. Where data were available, it was supplemented by three country specific variables: 'possessions in the home,' 'regularity of meals,' and 'use of test language in the home.' Information was not obtained on all of these variables in all countries. For Ireland, home possessions was used in addition to number of books (correlation between the variables was .80) to construct a 'home-background index'.

Within each country, schools were placed in rank order from the most effective to the least effective and the 20 schools at each extreme were selected for further study. These schools were then contrasted in terms of a list of factors (e.g., school characteristics, school resources, school management, teacher characteristics, and teaching methods) and differences were calculated for each to determine which factors were most powerful in discriminating the most effective from the least effective schools.

As might be expected, the factors found to be associated with effective schooling differ from one country to another. However, a number of consistent findings emerge. Some are supportive of the conclusions reached in the between-country analysis. For example, in many countries the more effective schools have libraries which are well-stocked with books, there is access to a professional library for teachers, and teachers tend to read widely in professional areas. Furthermore, effective schools tend to have opportunities for informal recreational reading for students through student magazines and papers and in other ways.

In many countries, effective schools have more female than male reading teachers as was also the case in Elley's (1992) cross-national comparisons. However, unlike the cross-national study, school size is associated with effective schools in many countries. Schools which have relatively high enrolments tend to be more effective than those with smaller numbers of students. It also emerged that if teachers move with their classes for two or more years, students tend to do relatively better than if teachers teach the class for only one year.

The Postlethwaite and Ross (1992) report also shows that a number of features relating to school management ware associated with achievement in many countries. Degree of parental co-operation (as perceived by the principal) is the factor that is most strongly associated with a school being more effective. Further, schools in which principals placed a high priority on discussing educational objectives with their staff and on evaluating the work of teachers tend to do rather better than ones in which principals are not involved in such activities.

Successful Teaching

The report by Lundberg and Linnakylä (1993) focused on the teaching of reading, particularly instructional factors that might be associated with more successful learning by students. They conclude that it is not possible to draw a composite profile of the features associated with good reading instruction that would apply to all (or many) of the countries in the survey, probably because teaching is bound up with a unique configuration of social and historical conditions in each country. While this may well be the case, there are also limitations that derive from the methodology of the IEA study, in particular the constraints of questionnaire information, that may fail to represent adequately many features of teaching, particularly ones relating to management skills, interpersonal interaction, commitment, and enthusiasm.

Despite these difficulties, a number of findings emerge from the study regarding teachers and practices that are associated with successful instruction in reading. Teachers' own reading was shown to be important in many countries: successful teachers tend to read rather more than their colleagues. Their reading includes not only material about education but also literature. Encouragement to read was also shown to be associated with higher reader scores. In the higher scoring schools, teachers provide many opportunities for students to read and frequently discuss with students what they have read. During lessons, children are urged to read actively, that is, they are encouraged to relate their own experiences to what they read, by making predictions about upcoming events, and by making generalizations, and inferences. While teachers tend to concentrate on such constructive strategies to promote understanding, they also use aspects of phonics instruction when appropriate.

It must be stressed that even these tentative conclusions are limited in several ways. None of the relationships holds for even half of the countries in the survey. Secondly, the conclusions of Lundberg and Linnakylä relate almost exclusively to 9-year olds. Given that the outcomes are specific to particular countries, the factors that were especially relevant to Ireland will be examined in later chapters.

EARLIER STUDIES OF READING IN IRELAND

Of the existing research on reading in Ireland, two kinds of study bear especially on the present work: (i) studies that compared the performance of students in the Irish system with that of students in other countries (especially Great Britain) or with that of students at some earlier time, and (ii) studies that attempted to establish associations between reading achievement and other factors relating to pupils, teachers, or schools. A sample of studies in each

category is reviewed in this section. A comprehensive review of the tests that have been used in the assessment of English reading in Irish primary schools is to be found in Forde and Shiel (1993).

A study by Macnamara (1966) (carried out in 1961) was especially influential in drawing attention to the standard of English in Irish schools. The study was primarily concerned with bilingualism and the effects of instruction in 'stronger' and 'weaker' languages. From the present perspective, the most significant outcome of the study was the great difference which was found between the performance of Irish and English children on a standardized test of reading comprehension. The results indicated that at the age of 11 years, Irish children were about two years behind their counterparts in English schools. Even though this might have been due, at least in part, to factors such as pupils' test sophistication and cultural bias in the tests (see Kellaghan & Madaus, 1982), the poor performance of Irish pupils had the effect of focusing attention on the teaching of English in Irish schools.

There are two sets of studies that subsequently charted the progress of English reading scores in Irish schools. From 1964 until 1984, the Teachers' Study Group carried out a series of studies of reading standards in Dublin city at five-yearly intervals. The test used was the NS6 which had been standardized in Britain in the mid-1950s and was used once in the 1960s and twice in the 1970s in national surveys in England. The Teachers' Study Group provided data that could be used to examine trends over time in Dublin as well as to make comparisons between the performance of Irish and English children. In addition, since the tests were administered to fifth class pupils, a comparison with Macnamara's results was facilitated. The results of these surveys indicate that while the standard of English comprehension was relatively stable during the 1960s, and thus at a level that was substantially below that obtaining in England, a dramatic improvement occurred in test scores during the 1970s so that by 1979 the gap between Irish and English children had narrowed considerably (Ward, 1982).

The second set of studies on standards of reading was carried out by the Department of Education. The studies were carried out on a nation-wide basis and while only some of the results have been published (e.g., Department of Education, 1982, 1993), the general pattern of the results is consistent with that in the study carried out by the Teachers' Study Group. Specifically, there is considerable evidence that the standard of English improved quite dramatically during the 1970s but that a 'levelling off' occurred during the 1980s.

A number of studies have also examined factors associated with reading achievement. Particular attention has been given to pupils' personal

characteristics, home background variables, classroom factors, and school factors (Kellaghan, 1985; Greaney, 1985).

Several studies have examined the association between reading achievement and such personal factors as scholastic ability, gender, and personality characteristics. Quite consistently, a relationship between various measures of scholastic ability and reading achievement (with an average correlation of about .6) has been found (Greaney, 1985). In general, differences between the genders in mean level of performance in most of the studies, including those of the Teachers' Study Group, have been rather modest or non-existent. Not much attention, however, has been paid to the extent to which there may be gender differences at the extremes of performance, a topic that has recently received much attention in the United States (e.g., Feingold, 1992) and was considered by Kellaghan (1993) for Irish 14-year olds using the IEA data (see Chapter 3). The results on personality and motivational characteristics are more clearcut. For example, students rated as having literacy problems by their teachers were also judged to be lower on a range of attributes including participation in class, working with limited supervision, and keenness to get on (Fontes & Kellaghan, 1977).

As might be expected, socio-economic background and similar factors have been found to be strongly related to reading achievement. Further, there is evidence that achievement differences between pupils that are associated with their home backgrounds tend to increase over time (Kellaghan, Sloane, Alvarez, & Bloom, 1993). It has also been shown that the association between home background and reading is similar whether the assessment of reading achievement is based on test scores or teachers' judgments (Kellaghan & Fontes, 1989). In studies both of pupils from high socio-economic homes (Greaney & Hegarty, 1987) and of pupils living in a disadvantaged area (Kellaghan, 1977), the home factors that have been found to be associated with reading achievement relate to the degree of structure and routine in the home, guidance on school matters, and the availability in the home of material and facilities for school learning.

Aspects of teaching style and strategies of instruction have been examined in a few studies in which the focus has been on broad features of styles of teaching. For example, Egan (1982) examined the pattern of achievement scores associated with informal and formal styles of teaching but found no difference between these for English reading. In contrast to this focus on broad features of teaching style, some studies with a more specific curricular emphasis have yielded more positive results. For instance, use of an individualized reading

programme was shown to be related to increased reading speed and accuracy (Kellaghan, 1969).

Some characteristics of schools and their association with reading achievement have also been examined. For example, a national study found that students in large schools and in small schools did rather better than students in schools of intermediate size (Martin & Kellaghan, 1977).

The IEA reading literacy study provides the opportunity to expand on these findings in a number of ways. In the first place, information was obtained at the four levels of pupil, home, classroom, and school. Secondly, because the survey was carried out in several countries, the findings should provide an indication of the extent to which any given outcomes are culturally specific.

MAJOR ISSUES IN RESEACH ON LITERACY INSTRUCTION

Because of the centrality of reading in the curriculum, issues relating to literacy instruction impinge on several areas of educational research. In addition, there are a number of questions that continue to receive widespread research attention and which are of particular concern in literacy. Here we consider a number of these.

What are the appropriate balances of whole language and decoding approaches to teaching children to read? While there is evidence that some of the heat has gone out of this debate, matters relating to it are still unresolved. To some people, the very term 'whole language' conveys the impression of attempting to replace necessary skill instruction with the old 'look and say' approach. Conversely, to some critics, the concept of 'code-emphasis' is regarded as a commitment to drill and rote learning at the expense of the higher-order dimensions of text (Adams, 1989).

How should comprehension be taught? There has been a considerable move away from the idea that comprehension can be taught by simply asking questions and supervising completion of accompanying workbook pages. Findings in cognitive psychology have been especially influential in directing attention to strategies that are essential features of instruction in comprehension (Bereiter & Scardamalia, 1992). Some recent research deriving from this position has emphasized the active involvement of readers in the comprehension process, and the use of strategies such as self-questioning, generative learning, and self-monitoring. Another critical issue relates to the type or context of comprehension instruction, particularly the extent to which teachers rely on 'real books' as opposed to graded reading schemes and the instructional paradigm that each implies.

How important is access to relevant reading materials? The role of social influences in reading has been well established. Equally important is access to suitable books and relevant materials. Related to this issue is the extent to which leisure reading is important in the development of reading skills and attitudes.

How should reading failure be tackled? Efforts to ameliorate reading problems raise questions about the provision of remedial services, as well as the value of other approaches in tackling such problems.

OUTLINE OF THE PRESENT REPORT

The selection of material for this national report was influenced by consideration of a combination of factors deriving from each section of this chapter. The massive data base would have allowed for concentration on any of hundreds of issues. Our selection was guided by: (i) the issues that had already received attention in the international reports, (ii) matters arising from previous research in Ireland, (iii) a consideration of issues that are currently the focus of research on reading, and (iv) policy relevance.

In Chapter 2, the methodology of the study is described. Results are examined in Chapter 3. Chapters 4 to 6 focus on an examination of the major influences on reading. Chapter 4 is also concerned with the context of literacy instruction, Chapter 5 with instructional processes, and Chapter 6 with the outcomes of literacy instruction. The final chapter sets out some policy implications.

Chapter 2. Methodology of the IEA Literacy Study

The main features of the methodology are described in this chapter. The sampling procedure is first described. This is followed by a description of the development of the literacy tests. Finally, the development of questionnaires and underlying constructs are described.

SAMPLE

Target Populations

The defined national target for Population A was all pupils attending school on a full-time basis in the grade-level in which most 9-year olds were to be found (i.e., third class in Irish primary schools) in 1991. Pupils attending special schools catering exclusively for the mentally handicapped were excluded, as were pupils attending private primary schools (who represented 1.4% of the target population) and pupils attending very small 'ordinary' primary schools (representing 2.8% of the population).

The defined national target for Population B was all pupils attending on a full-time basis in the grade level in which most 14-year olds were to be found (i.e., the second year of second-level schooling in Ireland) in 1991. No part of the defined target population was excluded by design.

Stratification

The primary school system in Ireland has two distinctive attributes. First, there are by international standards an unusually large proportion of schools which cater exclusively for pupils of just one sex, either boys only or girls only. Secondly, while most pupils are to be found in quite large schools, there are many small schools containing relatively few pupils. Furthermore, the two attributes, sex composition and size, are related. Most of the single-sex schools are quite large (although by no means all large schools are single-sex) and almost all of the smaller schools contain both boys and girls.

The population of schools in the defined target Population A was stratified by a combination of size (large: 300+; medium: 160–299; small: < 160) and gender composition of school to reflect these distinctive features. This resulted in seven categories, as shown in Table 2.1. The table shows the number and percentage of schools and pupils in each of the seven strata.

TABLE 2.1

POPULATION A: STRATA FOR THE DEFINED TARGET POPULATION

Stratum Number	Type	Population of Schools		Population of Students	
		Number	% of Pop.	Number	% of Pop
1	Boys Large	185	7.2	11058	16.3
2	Girls Large	198	7.7	10988	16.2
3	Mixed Large	280	10.8	17543	25.9
4	Boys Medium	134	5.2	2606	3.8
5	Girls Medium	141	5.5	2847	4.2
6	Mixed Medium	1085	42.4	18430	27.2
7	Mixed Small	551	21.3	4284	6.3
Total		2574	100.0	67756	100.0

Second-level schools in Ireland are generally larger and more centralized than primary schools. There are, however, substantial numbers of single-sex schools at second level also. There are three main administrative types of second-level school: Secondary, Vocational, and Community/Comprehensive. Approximately three-fifths of pupils attend secondary schools, which may contain boys only, girls only, or both. Most Vocational and Community/Comprehensive schools are co-educational. The combination of type of school and sex of pupil gives five stratification categories, as shown in Table 2.2. The table shows the number and percentage of schools and pupils in each of the five strata in Population B.

TABLE 2.2

POPULATION B: STRATA FOR THE DEFINED TARGET POPULATION

Stratum Number	Type	Population of Schools		Population of Students	
		Number	% of Pop.	Number	% of Pop.
1	Secondary Male	150	18.8	13217	20.0
2	Secondary Female	188	23.6	17447	26.4
3	Secondary Mixed	154	19.3	10998	16.7
4	Vocational	242	30.4	16146	24.5
5	Community/Compreh.	62	7.8	8196	12.4
Total		796	100.0	66004	100.0

Sample Allocation

The sampling design for the Reading Literacy Study specified a two-stage procedure, whereby schools were selected in the first stage (using a probability proportional to size technique) and a single intact class from each selected school in the second stage. The size of the actual sample of pupils was required to be sufficiently large to ensure an effective sample size of 400 pupils. Because of the two-stage sampling design, and the tendency for pupils in a class to resemble each other in achievement levels more than they resemble pupils in general, it was necessary to select a sample of pupils several times larger than 400 to achieve the precision of a simple random sample of 400 pupils.

The proportional allocation of schools across strata was intended to result in a distribution of pupils in the sample that would approximate to the distribution of pupils in the population. In Population A, because of the distribution of school size, it was not possible to reach this goal and also achieve a sufficiently large sample of pupils without selecting an unacceptably large number of schools, many of which would be very small. Accordingly, it was necessary to reach a compromise whereby relatively more large schools and relatively fewer small schools were selected than would have been the case if a strategy of strict proportional allocation had been followed.

The allocation of the sample of schools to strata for Population A is given in Table 2.3. The table shows a minimum expected class size for each stratum. Multiplying this figure by the planned number of schools to be selected gives a minimum expected number of pupils in each stratum in the sample. The sampling plan for this population, therefore, called for 134 schools, which were expected to contain at least 2,540 pupils. In fact, data were obtained from 122 schools, giving a response rate of 91% at the school level.

As the sampling plan at second level for Population B did not have to deal with the problem of small schools, it was possible to allocate the sample schools across strata in a way that more closely approximated the distribution of pupils across strata in the population (Table 2.4)

A distinctive feature of Population B schools compared to Population A is a much greater use of streaming and related grouping practices in the formation of classes. The use of streaming in class formation results (as intended) in a clustering of pupils of similar ability level within classes. Because the pupils in a class from a sample with a large clustering effect tend to have achievement levels more like their classmates than like other pupils in general in the sample, each pupil adds relatively less information to the total sample than would be the case in a sample with a small clustering effect. Samples with a large clustering

effect are therefore less efficient than samples with a small clustering effect and require more elements to give comparable precision.

TABLE 2.3

POPULATION A: ALLOCATION OF THE SAMPLE

		Sample of Schools		Sample of Students	
Stratum Number	Type	Planned Number of Schools	Expected Class Size	Minimum Expected Number	Minimum % of Sample
1	Boys Large	18	30	540	21.3
2	Girls Large	18	30	540	21.3
3	Mixed Large	28	30	840	33.1
4	Boys Medium	6	10	60	2.4
5	Girls Medium	6	10	60	2.4
6	Mixed Medium	42	10	420	16.5
7	Mixed Small	16	5	80	3.1
Total		134		2540	100.0

TABLE 2.4

POPULATION B: ALLOCATION OF THE SAMPLE

		Sample of Schools	Sample of Students	
Stratum Number	Type	Planned Number of Schools	Minimum Expected Number	% of Sample
1	Secondary Male	33	990	20.4
2	Secondary Female	42	1260	25.9
3	Secondary Mixed	27	810	16.7
4	Vocational	39	1170	24.1
5	Community/Compreh.	21	630	13.0
Total		162	4860	100.0

The clustering effect may be characterized by a statistic known as the intra-class correlation coefficient (also known as *rho*). The greater the clustering, the larger the intra-class correlation coefficient. Estimates of *rho* for third class

in primary school and for second year in second-level school were computed from unpublished data collected for an earlier study (Kellaghan, Madaus, & Airasian, 1982). These were estimated to be 0.13 for third class (Population A) and .35 for second year (Population B).

Due to the greater estimated value of *rho* for Population B schools, it was decided to increase the number of schools in the sample for this population. It was estimated that the sampling plan for the population called for 162 schools, which were expected to contain at least 4,860 students. Data were obtained from 151 schools, giving a response rate of 93% at the school level.

LITERACY TESTS

Domains and Cogntive Processes

Three domains of literacy were assessed: Narrative text, Expository text, and Documents. The *Narrative* domain consisted of text in which the writer's aim was to tell a story, whether fact or fiction. Stories normally followed a linear sequence and were intended to entertain or involve the reader emotionally. Text in the *Expository* domain was designed to describe, explain, or convey information or opinion to the reader in a formal and impersonal style, highlighting such features as definition, temporal order, causes and effects, and comparisons and contrasts. Finally, the *Documents* domain presented structured information in the form of charts, tables, maps, graphs, lists, or sets of instructions. In the case of documents, the reader has to search and locate rather than read sequentially through continuous text.

Another important consideration that guided test development was the kind of cognitive processes that the student was presumed to use in answering test items. The following system was used to classify items: (i) *verbatim match*, that is items in which the answer was provided in the passage, using the actual words in the passage; (ii) *paraphrase*, for which answers could be located in a passage but were somewhat different from the test items; (iii) *main idea*, for which the student was required to identify the main theme or purpose or message of a passage or a part thereof; (iv) *inference*, for which the student was required to make inferences or to generalize beyond the information given in a passage; (v) *location of information in documents*, which required students to find specific information in a document and carry out simple processes on it, and (vi) *following instructions*, in which the student was required to follow a series of instructions and to report what he or she found.

Development Procedures

Each of 20 countries submitted passages for consideration. The criteria for suitability included unfamiliarity to students, suitability for all countries, cultures, genders, and social groups, being well-written and interesting, and being capable of standing alone. Other factors that were taken into account were that the passages should contain new information that could not be answered from general knowledge, and that they should range from simple to complex and from short (50 words) to long (over 1000 words).

Several considerations guided the selection of test items. They should be either sentence-completion or multiple-choice in format, they should vary in difficulty, and should include a range of skills so that all of the cognitive processes listed above could be examined.

The screening of items (or questions) involved several steps. First, the initial pool of items was reduced from 2000 to 650 by the steering committee. Second, a representative from each country rated the suitability of all the passages and items on a 3-point scale and commented on them as appropriate. Third, pilot testing took place in 25 to 40 classrooms in each country with four parallel forms of the tests for each population. Fourth, an item analysis was carried out based on the pilot testing, and 'goodness of fit' with the Rasch model was used as a criterion in the final selection.

Countries were provided with explicit guidelines for translating tests and for making minor cultural adaptations to allow for differences in local conventions and idiom. To ensure equivalence of difficulty in translation, each passage and item was translated twice (independently) in non-English speaking countries. The effects of translations and cultural adaptations were considered negligible in light of comparisons of the relative difficulty levels of items across countries.

Final Versions of Literacy Tests

Table 2.5 shows the number of items in the final tests classified by population and by type of cognitive process. Judgments about the processes tested by each item were based on the results of a classification conducted by 27 raters in 12 countries.

Reliability coefficients for each domain were calculated using the Kuder-Richardson 21 formula and were found to average around .80 for both populations across countries. Coefficients were somewhat lower than this in a few countries with many low scoring students.

TABLE 2.5

NUMBER AND ITEM TYPES FOR EACH POPULATION IN FINAL TESTS

Process	Population A	Population B
Literal	8	3
Paraphrase	20	21
Main idea	3	7
Inference	12	24
Locate information	10	20
Locate and process	13	20
Total	66	95

PUPIL, TEACHER, SCHOOL, AND NATIONAL QUESTIONNAIRES

On the basis of previous research and their professional experience, the national co-ordinators, representing the systems of education in participating countries, identified a list of indicators that were thought to be important in explaining differences among pupils, classrooms, schools, and systems. Once the indicators had been identified, questions were devised and piloted in each country. On the basis of this work, a final selection of questionnaire items was made.

Several items were also developed to elicit factual information in questionnaires. The descriptive variables based on these items frequently concerned biographical or background information as well as the availability of particular resources in the school or classroom. The main indicators and variables that were common to instruments administered to Populations A and B are described in the following paragraph.

Students' Questionnaire

The focus of the students' questionnaire was on the following constructs: home literacy interaction, reading aloud, voluntary reading, and reading in class. Each construct was measured by means of a number of questionnaire items.

Home literacy interaction (Population A) was measured by means of three items which elicited information on the frequency with which people read to the student, frequency of pupil reading to someone in the home, and the extent to which parents or others asked about the pupil's reading at home. *The reading aloud* construct was concerned with how often the pupil read each of the following aloud: newspapers, magazines, comics, and words on the TV screen.

Voluntary reading involved five items concerning the frequency with which pupils read the following for fun: books, magazines, comics, newspapers, and other materials involving directions and instructions. *Reading in class* reflected the frequency of pupils' reading of textbooks, story books, workbooks, books in other 'content areas' and books as sources of information. For Population B, questions concerning voluntary reading were much more detailed than for Population A. Students were asked how frequently they read a variety of categories of material including science fiction, romance, poetry, and classical literature. Detailed information on newspaper reading was also elicited. Students were asked how often they read sections of newspapers dealing with sports, comic strips, news and politics, and business and finance. Further items dealt with the reading of various types of documents including maps, timetables, forms, directories, charts, graphs, and tables.

Information was also sought on the following descriptive variables: age, gender, home possessions and personal possessions, number of books in the home, whether or not the family got a daily newspaper, and frequency of watching television.

Teachers' Questionnaire

Among the constructs measured in the teachers' questionnaire were methods of comprehension instruction, beliefs regarding the importance of structure, phonics teaching, encouragement to read, taking students' interests into account, assessment (emphasis on general assessment and emphasis on lower-order skills), teacher's own reading, engagement of the school principal in school work, and emphasis at staff meetings.

Two major *aspects of comprehension* were measured. There were ten questions on the frequency of various activities that might enhance comprehension, including dramatizing stories, making predictions during reading, and making generalizations and inferences. The second feature of comprehension instruction was the extent to which children were actively involved in understanding what they read, particularly the extent to which they monitored what they were learning. Items focused on the frequency with which pupils were asked to describe their strategy for understanding, the use of a variety of methods to discover pupils' interests, and asking pupils to compare reading materials of various kinds.

The extent to which teachers emphasized *demand and structure* was measured by four items in Likert format, which sought information on the level of demands on children (e.g., 'Every mistake a child makes in reading aloud should be corrected at once.'), as well as the perceived value of sequence and

structure (e.g.,'Reading materials should be carefully sequenced in terms of language and structures and vocabulary.').

Questions on *phonics teaching* (Population A only) inquired about the frequency of activities involving learning letter-sound relationships and word-attack skills. *Encouragement to read* was measured by how often teachers reported they encouraged children to read and to use the library. Four items concerned the extent to which teachers took *students' interest into account,* as indicated by their knowledge of students' reading interests and their use of records of students' interest as an assessment method.

Constructs relating to assessment focused on emphasis on assessment and emphasis on lower-order skills. Items relating to *emphasis on general assessment* sought information on frequency of use of a variety of approaches to assessing students' learning, including answering written comprehension questions, doing exercises in workbooks, multiple-choice questions, and open-ended questions on material read. There were seven items that pertained to *emphasis on lower-order skills,* each of which related to how often teachers assessed basic features of reading such as decoding, sentence understanding, and word meanings.

Information was obtained on three aspects of teachers' own reading. *Teacher reading (expository)* centred on teachers' reading of history and politics, books on the arts, and books on science. The frequency of reading four kinds of literature (novels, poems, plays, and books for children) comprised the *teacher reading (literature)* construct. *Teacher reading (professional)* was measured by two items concerning the frequency of reading of articles on teaching and on reading.

The seven items on *principal engagement* were concerned with the extent to which teachers perceived that the school principal was involved in teaching and learning activities in the school. Questionnaire items included whether or not the principal made suggestions about content to be covered, discussed standards that might be reached, or asked for evaluation results of progress in reading. The construct relating to *staff meetings* focused on the extent to which various topics were subjects of staff discussion, i.e., curriculum content, the way the subject is presented and professional development of teachers.

Information was also sought on several descriptive variables. Teachers were asked about the number of years of primary and second-level education that they had received as well as the amount of third-level teacher education. They were also asked questions about the class that was being tested relating to number of pupils, whether or not it was a multi-grade class, and how long the teacher had been teaching the class. Other items were concerned with time spent on

instruction in total, on English generally, and on reading specifically. They were asked about the number of pupils in the class who needed remedial help in reading and how often the teacher met with parents. There was also a number of items on frequency of use of classroom library, school library, and local library.

For Population B, the items on teaching style were conceptually similar to those for Population A, but there were changes to allow for the difference in age of pupils. For example, items on *methods to encourage pupils to read* included 'holding discussions on books', 'giving special reading assignments' in addition to the items for Population A (e.g., suggesting books for pupils to read). Similarly, questions on reading activities included some items used for Population A teachers (e.g., silent reading in class), as well as some new activities (e.g., participating in a discussion of texts led by students).

School Questionnaire

The school questionnaire was completed by the school principal. It contained 24 questions relating to the school and its resources, to practices related to reading instruction, and to evaluation and beliefs relating to reading.

Two of the constructs measured in the questionnaire related to *reading materials in the school* and *community resources.* The variable, *reading materials in the school,* was measured by two items: the number of books in the school library and the number of books added to the school library in the year preceding the survey. The *community resources* variable focused on the extent to which the following facilities were available locally: a public library, a bookstore, second-level schools, and a higher education institution.

Information was also sought on several descriptive variables, including enrolment in the school, the funding of the school, and the type of community served by the school. There were also questions about the number of full-time teachers in the school and the number of special teachers (remedial and counselling teachers). Further items focused on the total instructional time in a typical week, the number of weeks that the school was open during the previous year, and the number of days of instruction lost during that year.

A further series of items related to *special programmes for the improvement of reading* outside normal classroom activities and about the existence of programmes to improve reading instruction in the school. In addition, respondents were asked to select, from a list of five, the two problems they considered to be most serious in providing for the teaching of reading.

Respondents were also asked about the *importance of various activities* in their role as school principals. The following activities were listed: representing the school at official meetings; evaluation of staff; contacts with the local

community; discussing educational objectives with the teaching staff; administrative tasks concerning the functioning of the school; using records of pupil progress; issues of pastoral care; and activities aimed at the professional development of teachers. Principals were asked to order these activities in terms of their importance.

The final area in the school questionnaire concerned *evaluation of the work of teachers* in the school. Principals were asked how frequently they evaluated the work of teachers (from 'never' to 'more than once a year'). In addition, they were asked about the procedures used for gathering evaluation information. Among the options were interviews, written reports by teachers, observation, and pupil ratings.

The only difference between the Population A and B school questionnaires was in relation to the level of detail sought on some items. More detail was sought on resources and activities in Population B schools than in Population A schools.

National Questionnaire

The national case study questionnaire was designed to gather educational, economic, political, and cultural data that might help explain variance in school achievement across nations and regions. Information was obtained on the *structure of the school system* (school enrolments at each age level and the percentage attending each type of school) and on the *curriculum in reading* (the main methods used to teach reading and the amount of freedom that teachers had in implementing the reading curriculum). There were a number of items relating to teachers (numbers, training, salary), as well as a section on *instructional time*, including the proportion of time devoted to reading in schools.

Information was also sought on a number of national *social and economic issues*. There were questions related to expenditure on schools, Gross Domestic Product, as well as birth rate and infant mortality. A final area related to *language and culture* sought information on circulation of daily newspapers, books published in the country, and the number of books held in public libraries.

ANALYSES

Since the questionnaires yielded over 500 variables, it is worth considering the various types of variable that were actually used in analyses. In some cases, responses to a single question were used as a variable, while in other cases, responses to several questions were combined to form a variable. Three types of variable were commonly used: single variables, derived ratio variables, and derived composite variables.

Several *single variables* were used. From the student questionnaire many of the descriptive variables such as age, gender, and number of books were used only in this way. Other examples of single variables were teachers' teaching experience (years), number of pupils in a class, and number of pupils in a school.

Examples of *derived ratio* variables were number of library books per student and student-teacher ratio. The number of library books per student was obtained by dividing the total number of books in the school library by the total number of students in the school, while the student-teacher ratio was computed by dividing the number of students in the school by the number of full-time teachers in the school. Another example of a derived ratio variable was the proportion of pupils in a class that was thought to require remedial assistance. This figure was obtained by dividing the total class enrolment by the number of students who were identified by the class teacher as requiring remedial assistance.

Composite variables were derived by combining responses to several questions. For example, the 'active teaching of comprehension' was derived from several items, including the extent to which teachers explained the background to stories, encouraged students to compare stories, and assessed comprehension. Similarly, 'taking students' interests into account' was based on items indicating the extent to which teachers used their knowledge of students' interests gained from records and informal observations and interviews.

Factor Analysis of Composite Variables to Form International Constructs

Variables that were considered to be conceptually related (described above as derived composite variables) were subjected to a principal components factor analysis to determine whether the underlying factor structure was similar to the hypothesized structure. The factor analysis was carried out on the pooled international data set as well as on the data set for each country. In addition to calculating factor loadings, estimates of the reliability of the factors were derived and the amount of variance explained by each factor was determined.

In the international factor analysis, the pooled data set from all countries was used and, in the case of the principals' and teachers' questionnaires, the complete data set was used. However, for the student questionnaire, a random selection of 400 individuals from each country was made due to limitations in available computing capacity.

Table 2.6 shows the results for Population A data of the international factor analysis as well as the corresponding data for Ireland on three constructs to illustrate the pattern of results found in the analyses. In general, it can be seen

TABLE 2.6

FACTORS AND FACTOR LOADINGS FOR INTERNATIONAL DATA AND FOR IRELAND, POPULATION A

Items	Loadings International	Ireland
Factor I Comprehension Instruction		
Dramatize stories	.62	.56
Orally summarize reading	.61	.70
Relating reading to experience	.70	.67
Making predictions	.63	.60
Diagramming content	.64	.30
Looking for theme	.77	.73
Generalization & inference	.78	.72
Study style and structure	.73	.57
Compare pictures & stories	.67	.54
Student discussion	.64	.48
Variance accounted for	.46	.36
Reliability estimate	.87	.80
Factor 5 - Home Literacy Interaction		
People read to student	.62	.54
Frequent reading at home	.78	.77
Frequent asking about reading	.63	.59
Reading aloud at home	.62	.62
Variance accounted for	.44	.40
Reliability estimate	.58	.50
Factor 9 - Principal Engagement		
Evaluation of Principal	.62	.68
Discuss standards	.75	.69
Ask for results	.66	.65
Suggest methods	.76	.73
Encourage teacher content	.56	.46
Teacher development	.61	.64
Suggest content	.72	.63
Variance accounted for	.45	.41
Reliability estimate	.80	.76

that there is a correspondence between the international and Irish loadings on the various factors. In addition, the variance accounted for and the reliability estimates tend to be quite similar for both. The exceptions to this pattern can beunderstood in terms of instructional and other practices in Ireland. For example, diagramming of content has an international loading

of .64 but a loading of only .30 for Ireland. Since diagramming of content is probably an unusual instructional practice in Irish schools, the difference is understandable.

Chapter 3. Reading Literacy Performance: International Comparisons

In this chapter, data on the reading literacy performance of 9-year olds (Population A) and of 14-year olds (Population B) is presented with particular reference to the average performance of Irish students compared to the performance of students in other countries in the survey.

An international scale, using a variation of the Rasch scaling method, was created for each of the literacy text domains (Narrative, Expository, and Document). Each student in the study was assigned a score on each of the three scales. Scales were designed to have an international mean of 500, and a standard deviation of 100. These values were chosen for convenience only; no particular significance attaches to them. Each student's three scores were then averaged to produce an overall literacy score. The literacy scores are an index of the average performance of a student relative to the average performance of other students in the study.

POPULATION A (9-YEAR OLDS)

Mean national scores for each of the 27 countries which participated in the Population A study are presented in Table 3.1. Mean scale scores are provided for each of the three literacy domains and for overall literacy. Figure 3.1 displays in graphical form, statistics for the overall literacy scale. In the Figure, the mean score for each country is embedded in a segment which conveys information about the sampling variability of that mean. The width of the interval (twice the width of the standard error of the mean on both sides of the mean) defines a segment of the scale which we can be fairly confident contains the mean of the entire population of students from which those who took part in the survey were drawn. If the segments for adjacent countries overlap, the probability is high that any observed difference between their mean scores could have arisen by chance through the sampling process. When segments for countries do not overlap, differences between the mean scores are unlikely to have been the result of sampling fluctuations, and hence may be considered to be statistically significant. Figure 3.1 also shows a wider interval, delineated by one standard deviation on both sides of the mean, which contains the scores of approximately two-thirds of the students in the population.

TABLE 3.1

MEAN SCORES FOR LITERACY DOMAINS, BY COUNTRY
POPULATION A

Country	Overall Literacy	Narrative	Expository	Document
Finland	569	568	569	569
USA	547	553	538	539
Sweden	539	536	542	539
France	531	532	533	527
Italy	529	533	538	517
New Zealand	528	534	531	521
Norway	524	525	528	519
Iceland	518	518	517	519
Hong Kong	517	495	503	554
Singapore	515	521	519	504
Switzerland	511	506	507	522
Ireland	509	518	514	495
Belgium (French)	507	510	505	506
Greece	504	514	511	488
Spain	504	497	505	509
Germany/West	503	491	497	520
Canada (BC)	500	502	499	500
Hungary	499	496	493	509
Germany/East	499	482	493	522
Slovenia	498	502	489	503
Netherlands	485	494	480	481
Cyprus	481	492	475	476
Portugal	478	483	480	471
Denmark	477	468	467	496
Trinidad & Tobago	451	455	458	440
Indonesia	394	402	411	369
Venezuela	383	378	396	374
Average	500	500	500	500

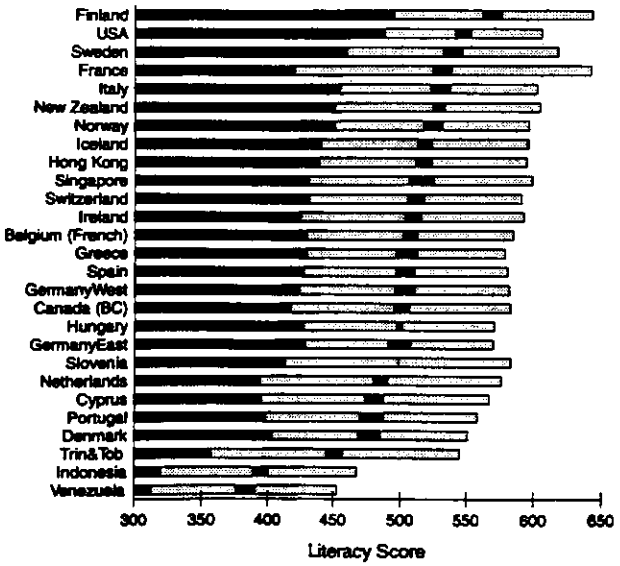
The countries in Table 3.1 and Figure 3.1 are ordered from top to bottom in terms of their mean scores. The mean score of Irish children is 12th of the 27 countries. Irish 9-year olds scored just above the international average. There is considerable overlap in the score distributions of the different countries (Figure 3.1). From an Irish perspective, it is possible to identify three groups of countries. In the first group there are eight countries (Finland, USA, Sweden, France, Italy, New Zealand, Norway, and Iceland) which have a mean score that is significantly greater than the Irish mean. In the second group, there are 11 countries for which the mean score is sufficiently close to the Irish mean score

that it could have occurred from random variation in the sampling process. This group comprises Hong Kong, Singapore, Switzerland, Belgium (French speaking), Greece, Spain, West Germany, Canada (British Columbia), Hungary, East Germany, and Slovenia. Finally, the third group contains seven countries that have a mean score that is significantly below the Irish mean. These countries are the Netherlands, Cyprus, Portugal, Denmark, Trinidad & Tobago, Indonesia, and Venezuela.

In the context of European Community countries, the Irish average is below that of France and Italy but above that of the Netherlands, Portugal, and Denmark. Differences between the Irish average and those for West Germany, Belgium, and Greece are not statistically significant.

FIGURE 3.1

THE DISTRIBUTION OF OVERALL LITERACY SCORES BY COUNTRY, POPULATION A



Note. The mean for all countries is shown embedded in a segment (coloured black) which can be said, with 95% level of confidence, to contain the mean of the entire population for that country. The wider segment (lighter shade) contains the scores of approximately two-thirds of the students in the population.

Literacy Domains

Mean scores for each country in the three literacy domains are presented in Table 3.1. An estimate can be made from the data in the table of each country's strengths and weaknesses across domains. The strongest performance of Irish pupils occurs on the Narrative scale, on which they have the 9th highest average score of the 27 countries. Irish pupils also performed well on the Expository (factual material) scale and are only a little behind performance on the Narrative scale. However, Irish pupils did much less well on the Documents scale, scoring below the international average. Eighteen countries have higher mean scores on this scale than Ireland. Looked at another way, if Irish pupils had scored as well on the Documents as on the Narrative tests, their rank order on the overall literacy scale would have been raised by four places.

It may be that the kinds of text represented in the Documents domain are relatively unfamiliar to pupils in Irish primary schools. The Review Body on the Primary Curriculum (1990) noted that there was considerable emphasis on learning to read in the primary school and that there had been significant improvements in reading achievement over the previous twenty years. However, it also noted that, compared to the emphasis on learning to read, the area of reading to learn (including study skills and skills in locating, organizing, and remembering information) had received less attention. It is largely such skills that are assessed by questions in the Documents domain.

POPULATION B (14-YEAR OLDS)

The national results for Population B students are summarized in Table 3.2. Mean national scores for each country in each of the three literacy domains and for overall literacy are presented. The overall literacy results are presented in graphical form in Figure 3.2. Of the 27 countries that participated in the study at Population A level, all but one (Indonesia) also participated at Population B level. An additional five countries took part at Population B level only, giving a total of 31 countries at this level. The additional countries are Botswana, Nigeria, the Philippines, Thailand, and Zimbabwe.

Participating countries can be divided into three groups on the basis of their performance relative to the Irish performance. Students in 11 countries have significantly higher mean scores than Irish students. The countries, in descending order of average performance, are Finland, France, Sweden, New Zealand, Switzerland, Iceland, Hungary, Hong Kong, USA, Singapore, and Slovenia. A second group contains 10 countries, in which mean literacy scores do not differ significantly from the Irish mean. These countries are East Germany, Denmark,

Portugal, West Germany, Canada (British Columbia), Norway, Italy, the Netherlands, Greece, and Cyprus. The third group, in which there are nine countries, have a mean score that is significantly below the Irish mean. The group comprises Spain, Belgium (French), Trinidad & Tobago, Thailand, the Philippines, Venezuela, Nigeria, Zimbabwe, and Botswana.

TABLE 3.2

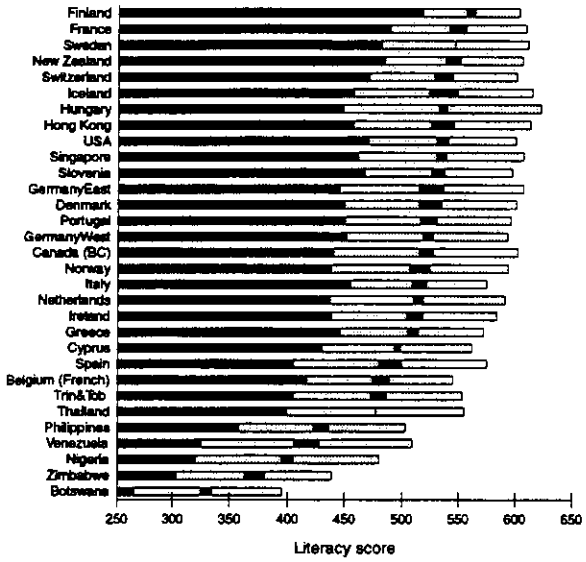
MEAN SCORES FOR LITERACY DOMAINS, BY COUNTRY, POPULATION B

Country	Overall Literacy	Narrative	Expository	Document
Finland	560	558	541	580
France	549	556	546	544
Sweden	546	555	533	550
New Zealand	545	547	535	552
Switzerland	536	533	525	549
Iceland	536	549	548	509
Hungary	535	529	536	542
Hong Kong	535	509	540	557
USA	535	538	539	528
Singapore	534	530	539	533
Slovenia	532	533	525	537
Germany/East	526	511	523	543
Denmark	525	517	524	532
Portugal	523	522	523	523
Germany/West	522	514	521	532
Canada (BC)	521	526	516	522
Norway	516	515	520	512
Italy	515	519	524	501
Netherlands	514	506	503	533
Ireland	511	510	505	518
Greece	509	526	508	493
Cyprus	496	515	492	482
Spain	490	499	495	475
Belgium (French)	481	484	477	483
Trinidad & Tobago	479	482	485	472
Thailand	477	468	486	478
Philippines	430	420	439	430
Venezuela	417	406	433	412
Nigeria	400	402	406	394
Zimbabwe	371	367	374	373
Botswana	330	340	339	312
Average	500	500	500	500

It is evident from Table 3.2 that in Ireland, 14-year olds exhibit a different pattern of strengths and weakness across literacy domains than do 9-year olds. Whereas the younger pupils performed best on Narrative and Expository texts, and were relatively weak on Documents, the older students had a more balanced pattern of performance, and in fact performed best on the Documents domain.

FIGURE 3.2

THE DISTRIBUTION OF OVERALL LITERACY SCORES BY COUNTRY, POPULATION B



Note. The mean for all countries is shown embedded in a segment (coloured black) which can be said, with 95% level of confidence, to contain the mean of the entire population for that country. The wider interval (lighter shade) contains the scores of approximately two-thirds of the students in the population.

PERFORMANCE DIFFERENCES BETWEEN AGE LEVELS

Comparisons of relative international performance across age levels are complicated by the fact that not all countries participated at both levels. Ireland's position for both populations is summarized in Table 3.3.

Ireland is in the middle group for both populations. However, there is some indication of a decline in relative position in Population B. For example, Hong

Kong, Singapore, Switzerland, and Slovenia have mean achievement scores that do not differ significantly from the Irish mean for Population A but are significantly higher than the Irish mean for Population B. Nevertheless, the situation is not clearcut. Belgium and Spain are not significantly different from Ireland in Population A but are below Ireland in Population B.

AGE DIFFERENCES ACROSS COUNTRIES

Since a major focus of the Reading Literacy study was on school and classroom features related to student literacy performance, the target population for each country was defined in terms of intact grade levels. Each country was asked to choose (at Population A level) the grade level that contained most pupils who were 9 years old in the eighth month of the school year. In Ireland, the appropriate grade level was third class. Other countries have different names for this grade. Because of differences between countries in school intake and promotion policies, there are also differences in the average age of pupils at this grade level. On average, Irish pupils in Population A are younger than those in most other countries. In a few countries (Greece, Hungary, Singapore, and the Netherlands), the average age of pupils is similar to that in Ireland. Only Canada (British Columbia) has a significantly younger population. In several countries, the average age of pupils in the appropriate grade is more than six months above the Irish average.

Because Irish Population A pupils are younger than pupils in some other countries, they may be at a disadvantage in international comparisons of average reading performance. While there is no completely satisfactory method of adjusting performance levels to compensate for age differences in the present study, Elley (1992) carried out a series of analyses that attempted to estimate the average effect of age on performance across countries. The results of these analyses indicate that the countries with younger populations are indeed disadvantaged to varying degrees in the comparisons. For example, if the age of Irish pupils in Population A had been at the average for pupils in the study as a whole, it is estimated that their average score would have been 7 points higher than it actually is. Other countries which could expect to increase their average scores in this situation include the Netherlands, Germany (East and West), Hungary, Greece, Singapore, and especially Canada (British Columbia). The countries that could expect the largest decreases are Indonesia, Venezuela, and Portugal. If the estimated age corrections were applied to all countries in Population A, the rank order of average country performance would not be greatly affected, however. The countries which actually did best would still be

at the top and the lowest achievers would still be at the bottom. Ireland would improve two places, from twelfth to tenth place.

TABLE 3.3

COMPARISON OF IRELAND'S PERFORMANCE IN POPULATIONS A AND B

Population A			Population B		
Countries Scoring Better than Ireland	Countries Scoring Same as Ireland	Countries Scoring Lower than Ireland	Countries Scoring Better than Ireland	Countries Scoring Same as Ireland	Countries Scoring Lower than Ireland
Finland	Hong Kong	Netherlands	Finland	Germany/East	Spain
USA	Singapore	Cyprus	France	Denmark	Belgium
Sweden	Switzerland	Portugal	Sweden	Portugal	(French)
France	Belgium	Denmark	New Zealand	Germany/West	Trinidad &
Italy	(French)	Trinidad &	Switzerland	Canada (BC)	Tobago
New Zealand	Greece	Tobago	Iceland	Norway	Thailand
Norway	Spain	Indonesia	Hungary	Italy	Philippines
Iceland	Germany/West	Venezuela	Hong Kong	Netherlands	Venezuela
	Canada (BC)		USA	Greece	Nigeria
	Hungary		Singapore	Cyprus	Zimbabwe
	Germany/East		Slovenia		Botswana
	Slovenia				

Irish students are also relatively young at Population B level. If their average age is adjusted to the average for students in the study as a whole it is estimated that their average score would rise by 6 points. This would result in an improvement in rank order of just one place. There are some countries where the effect of such an adjustment for age would be more dramatic. Hungary, Canada (British Columbia), and Italy would each move up the ranking considerably, while France, Hong Kong, and Portugal would each slip down the ranks. Finland would remain in first place, and the rank order of the lowest performing seven countries would also remain unchanged.

ECONOMIC AND SOCIAL DEVELOPMENT

It is generally accepted that literacy levels are influenced by the level of economic and social development of a country. While it is very difficult to isolate the precise factors that lead to enhanced literacy levels, there is widespread agreement that countries with prosperous populations living in comfortable homes where children attend well-equipped schools with well-qualified and

respected teachers tend to have high levels of literacy. Attempts to identify factors in the educational system that encourage high levels of literacy run into the problem of disentangling educational factors from social and economic ones, since it is the more prosperous countries that can afford to invest in their educational systems.

Just as differences in average age across countries make comparisons of literacy performance difficult, it can be argued that differences in economic development also confound such comparisons. Using per capita Gross National Product (GNP) as an index of national prosperity, it is possible to estimate average literacy levels for given levels of prosperity. When this is done for Irish 9-year olds, their actual level of performance is found to be 14 points above the average that one would expect on the basis of per capita GNP. For Irish 14-year olds, the actual level of performance is just 5 points above the level that would be expected on the basis of economic development. This is another indication that the relatively good performance of Irish 9-year olds is not maintained in the 14-year old population.

INTERNATIONAL COMPARISONS IN OTHER SUBJECT AREAS

It is interesting to compare Ireland's position in the present survey with its position in international surveys in other subjects. In this regard, the studies in mathematics and science of the International Assessment of Educational Progress (IAEP) are especially relevant (Lapointe, Askew, & Mead, 1992; Lapointe, Mead, & Askew, 1992). In these surveys, the mathematics achievements of 13-year-old students were assessed in 21 countries, and the science achievements in 20 countries.

Irish 13-year-old students performed at about the mean of the 21 countries in the mathematics survey. While this may be regarded as a reasonably good performance, a closer inspection indicates that this position in the league table is heavily influenced by an extremely good performance on Numbers and Operations. Irish students did relatively better on number than on any other area of mathematics. In addition, Irish school principals indicated that their school placed a strong emphasis on such topics as whole number operations, common fractions, decimals, ratio and proportions, and percentages. When we compare the performance of students in Ireland with the performance of students in England and Scotland, whose performance on the overall mathematics tests was similar to that of Irish students, we find that English and Scottish students did rather less well than Irish children on numbers and operations and relatively better on data analysis, probability, and geometry.

What this seems to suggest is that Irish students perform rather well on tests of basic skills but less well, compared to other countries, on tests of 'higher order' skills. Data from the literacy study do not allow us to make similar inferences about literacy. However, we shall return to this issue later, when we consider objectives, teaching strategies, and instructional activities.

Irish 13-year-old students performed poorly in the IAEP science study. Among industrialized countries, they shared the bottom ranking with Portugal and the United States (OECD, 1993). It is especially noteworthy that there was a large disparity between the results for Irish students in science and mathematics. An indication of this disparity is the large number of countries that had similar levels of achievement to Ireland in mathematics but fared better in science. Among these countries are Italy, Canada, France, Scotland, and England (OECD, 1993).

GENDER DIFFERENCES

Mean scores on the reading literacy test were higher for girls than for boys in all countries in Population A (Table 3.4) and in most countries in Population B (Table 3.5). Taking all countries together, the advantage of girls in reading dropped from 12 points in Population A to 7 points in Population B. In a number of countries, including Denmark, New Zealand, Norway, Greece, and Portugal, the performance of boys dramatically improved between ages 9 and 14. In Denmark, the difference between males and females declined by 22 points.

Girls had the greatest advantage in the Narrative domain, less in the Expository domain, while there were very few differences in relation to Documents. The decline in the mean difference between boys and girls occurs largely because of the loss of the substantial advantage that girls had in the Expository domain at age 9.

The most interesting feature of the results from our viewpoint is that gender differences were greater in Ireland than in most other countries. Irish students exhibited the sixth largest gender difference at age 9 and the third largest at age 14. Only Thailand and Trinidad & Tobago had greater gender differences at age 14. Furthermore, Ireland was one of the few countries in which the advantage of girls over boys actually increased between ages 9 and 14.

Before considering possible reasons for gender differences, one feature of the differences that is worth considering is whether it occurs to the same extent among poor, average, and competent readers. In examining this issue, Morgan and Martin (1993) found that the advantage of girls over boys was greater at lower levels of performance. It was estimated that nearly three times as many

boys as girls had reading problems based on the criterion of being one standard deviation below the international mean. Kellaghan's (1993) analysis of gender-related perfomances on the IEA literacy test in two other countries (Denmark and the Netherlands) found that there were also fewer girls than boys among low scorers in these countries but that the gender disparity was not at all as great as in Ireland. It would appear that boys are at a greater disadvantage in literacy achievement in the Irish system of education than in other systems.

TABLE 3.4

MEAN LITERACY SCORES FOR BOYS AND GIRLS, BY COUNTRY, POPULATION A

Country	Average Score		Difference
	Boys	Girls	
Belgium (French)	503	512	9
Canada (BC)	495	506	11*
Cyprus	479	484	5
Denmark	463	489	26*
Finland	564	575	11*
France	530	533	3
Germany/East	490	509	19*
Germany/West	501	508	7
Greece	499	510	11*
Hong Kong	512	524	12*
Hungary	495	504	9
Iceland	508	528	20*
Indonesia	394	397	3
Ireland	502	517	15*
Italy	525	537	12*
Netherlands	483	488	5
New Zealand	519	539	20*
Norway	517	533	16*
Portugal	474	483	9
Singapore	510	521	11*
Slovenia	491	506	15*
Spain	500	508	8*
Sweden	533	546	13*
Switzerland	507	517	10*
Trinidad & Tobago	443	460	17*
USA	543	552	9*
Venezuela	379	392	13*

* Difference significant at .05 level.

TABLE 3.5

MEAN LITERACY SCORES FOR BOYS AND GIRLS, BY COUNTRY, POPULATION B

Country	Average Score		Difference
	Boys	Girls	
Belgium (French)	480	486	6
Botswana	327	333	6
Canada (BC)	513	534	21*
Cyprus	493	501	8*
Denmark	523	527	4
Finland	554	568	14*
France	553	549	-4
Germany/East	523	530	7
Germany/West	522	526	4
Greece	509	510	1
Hong Kong	533	538	5
Hungary	528	542	14*
Iceland	530	543	13*
Ireland	502	525	23*
Italy	511	520	9*
Netherlands	511	520	9
New Zealand	544	549	5
Nigeria	401	401	0
Norway	516	520	4
Philippines	427	432	5
Portugal	528	520	-8*
Singapore	534	534	0
Slovenia	529	534	5
Spain	488	492	4
Sweden	540	555	15*
Switzerland	535	538	3
Thailand	464	488	24*
Trinidad & Tobago	466	492	26*
USA	530	543	13*
Venezuela	419	421	2
Zimbabwe	380	363	-17*

* Difference significant at .05 level.

It is most likely that such gender differences are cultural rather than biological in origin. Perhaps the strongest evidence for this is to be found in the meta-analysis by Hyde and Linn (1988) of 165 studies in the United States which demonstrated that cognitive gender differences in verbal ability (especially reading comprehension) had diminished dramatically over time in the United

States. Further, when Hyde and Lynn carried out an analysis by age, no significant changes in the magnitude of gender differences were found, a finding that fails to support the belief that gender differences in verbal ability emerge around adolescence.

Why might gender differences be relatively greater in Ireland than in other countries? One possibility worth considering is the high percentage of female teachers in schools. In Population A (third class in Ireland), 71% of teachers are female, a percentage that is even greater in more junior classes. A comparison of gender-related score differences at age 9 in countries with small and large gender gaps provides some support for the hypothesis that gender of teacher might affect pupil performance (Table 3.6). However, the association of gender difference with proportion of female teachers is not consistent. For example, Denmark has the highest gender gap, where only 57% of teachers are female, while France, with 67% female teachers, has one of the smallest gender differences.

TABLE 3.6

PERCENTAGES OF FEMALE TEACHERS IN PRIMARY SCHOOLS IN COUNTRIES WITH LARGE AND SMALL GENDER GAPS, POPULATION A

	Country	Score Difference	% Female Teachers
Large Gender Gap	Denmark	26	57
	New Zealand	20	76
	Iceland	20	85
	Germany/East	19	99
	Trinidad & Tobago	17	71
	Mean	20.4	75.6
Small Gender Gap	France	3	67
	Indonesia	3	47
	Cyprus	5	57
	Netherlands	5	40
	Germany/West	7	80
	Mean	4.6	58.2

Another possible reason for gender differences is that they are related to some features of schooling that interact with different rates of language development in boys and girls. A brief reference to this possibility was made by Elley (1992) and seems worth pursuing. It may be, for example, that the language

development of boys on entering school is so far behind that of girls that the former encounter failure with reading from the very beginning and that the residual effects of such failure are still evident in adolescence. The fact that the countries with the greatest gender differences tend to be those which begin formal reading relatively early supports this view (Elley, 1992). A persistent effect on motivation (from early learning until adolescence) would be consistent with cognitive and attributional models of motivation (Morgan, 1985). Such models would predict that early failure would result in negative internal attributions ('I'm no good at reading'), followed by subsequent failure to try hard even when conditions become more favourable.

Chapter 4. The Context of Literacy Instruction

This chapter is organized around questions relating to significant features of (i) classes, (ii) teachers, and (iii) school management. First, we examine how the size of classes in Ireland compares with class size in other countries as well as data relating to access to remedial teachers and perceived need for such services. Some features of the professional development of teachers are then considered, with particular focus on two indicators of development, inservice training and professional reading. Finally, the style of management of Irish principal teachers is compared with the style of their colleagues in other countries.

The organizing framework for each section is similar. First, the significance of the issue being examined is addressed, with reference to the current literature on the topic. Next, the international comparative data on the relevant variable are presented. In most cases, comparisons are based on univariate statistics for all countries in the survey. Then, evidence for the importance of the issue is considered in the context of existing international research reports of the IEA literacy study. Finally, some implications of the findings are discussed. In some sections, where a comparison between the performance of 9- and 14-year olds seems of particular interest, relevant information is presented.

CLASS SIZE AND ACCESS TO REMEDIAL TEACHERS

Significance of Class Size

A review of literature on class size is beyond the scope of this chapter. However, it is necessary to refer to some of the main conclusions that emerge from the vast number of studies that have focused on this topic. Some recent influential reviews of class size suggest that the effects of reductions in size will depend on a number of factors including the size of the reduction, the nature of instructional objectives, and the characteristics of learners. Glass, Cahen, Smith and Filby (1982) combined the results of studies from several countries involving close to a million students in a meta-analysis. Results suggest that reductions in class size can bring about significant improvement in educational performance, but only if the reduction is considerable. It would seem that classes need to have less than 20 students if substantial improvements in achievement are to occur. Variation in numbers above 20 seems to make little difference.

The conclusions of Robinson and Witterbols (1986), who also reviewed a large number of studies, are more specific. Their main conclusion is that small classes are more likely to be of benefit in certain restricted circumstances, particularly during the early years of primary school and with children of less than average intelligence.

There are some recent well-controlled experimental studies that have demonstrated positive effects of reductions in class size. Finn and Achilles (1990) report on a state-wide experiment in Tennessee (involving 328 classes and 6500 pupils) in which children entering kindergarten were assigned at random to one of three types of class: small (with an enrolment range of 13 to 17 children), regular (enrolment 22 to 25 pupils) and regular with aide, (22 to 25 pupils but with a teacher's aide to work with the class). Results indicate that significant benefits accrued to students in the small classes in both reading and mathematics. There was also an indication that minority students in particular benefited from the small classes especially when curriculum-based (as opposed to standardized) tests were used to assess learning. However, even experimental studies such as this have produced conflicting results. A study in Toronto in which pupils were randomly assigned to classes of 16, 30, or 37 pupils failed to find effects for most achievement measures, including reading vocabulary, problem solving, and composition (Shapson, Wright, Eason, & Fitzgerald, 1980).

International Comparison of Class Sizes and Access to Remedial Teaching

How do average class sizes in Ireland compare with other countries in primary and second-level schools? And how do countries compare with regard to perceived needs for remedial services and the availability of such services?

Class Size and Remedial Help in Population A. The average number of pupils in classes in Population A for participating countries as well as the proportion of pupils who were perceived by class teachers to require remedial help in reading are presented in Table 4.1. The proportions of pupils whose needs were being met, i.e., the proportions of those identified as needing remedial attention who are actually receiving it, are also shown in the table.

It is clear that the average number of pupils in Irish classes (30.96) is high by international standards. Only in Singapore, Hong Kong, Venezuela, and Indonesia are average class sizes higher than in Ireland. Scandinavian countries generally have small classes, notably Denmark. Even within the European Community, some of the countries that are normally categorized with Ireland (Portugal and Greece) as 'poorer' have relatively smaller classes. However, there are a number of interesting and important exceptions. In the Netherlands and New Zealand, average class size is quite similar to Ireland.

The average percentage in each class who were thought to be in need of remedial help was 12 in Ireland. By comparison with other countries, this figure is not particularly remarkable and is close to the average for European countries in the survey (13.5%). The United States is rather exceptional in that nearly one-quarter of pupils were judged by teachers to require such help. Provision for

pupils in need of remedial help is reasonably good in Ireland (55%) by international standards. What is most remarkable about the figures for the various countries is the great variation and the lack of a clear pattern, even within regions. Provision is lowest in Portugal with 12% and highest in Sweden with 82 percent. Nearly two-thirds of pupils in Denmark who need help receive it, but the corresponding figure for the Netherlands is only 30 percent. Provision in New Zealand is almost exactly the same as in Ireland.

TABLE 4.1

MEAN CLASS SIZE AND PROPORTIONS IN NEED OF REMEDIAL PROVISION, BY COUNTRY, POPULATION A

	Mean Class Size	Proportion Needing Remedial Provision	Proportion Needing Remedial Provision Catered For
Belgium (French)	20.32	.21	.20
Canada (BC)	23.34	.18	.73
Cyprus	25.38	.07	.55
Denmark	17.16	.15	.67
Finland	24.57	.13	.69
France	23.53	.20	.25
Germany/East	20.84	.09	.31
Germany/West	22.62	.17	.73
Greece	23.33	.10	.20
Hong Kong	36.37	.08	.21
Hungary	23.38	.20	.63
Iceland	20.09	.10	.68
Indonesia	32.48	.24	.38
Ireland	30.96	.12	.55
Italy	16.02	.13	.35
Netherlands	26.65	.08	.30
New Zealand	29.76	.11	.52
Norway	17.65	.11	.66
Portugal	20.79	.14	.12
Singapore	38.37	.16	.54
Slovenia	24.64	.16	.70
Spain	28.79	.15	.72
Sweden	20.09	.15	.82
Switzerland	19.57	.19	.44
Trinidad & Tobago	28.02	.26	.63
USA	24.58	.24	.64
Venezuela	32.62	.22	.58
Overall mean	24.87	.16	.51

Class Size and Remedial Help in Population B. Average class size in each country in Population B (second year of second level in Ireland) is shown in Table 4.2. The average class size in Ireland at 25.6 is somewhat above the mean but not greatly so (as was the case for Population A). Classes in Ireland tend to be

TABLE 4.2

MEAN CLASS SIZE AND PROPORTION IN NEED OF REMEDIAL PROVISION BY COUNTRY, POPULATION B

	Mean Class Size	Proportion Needing Remedial Provision	Proportion Needing Remedial Provision Catered For
Belgium (French)	19.8	.29	.12
Botswana	35.7	.19	.78
Canada (BC)	25.1	.14	.51
Cyprus	29.8	.14	.08
Denmark	19.1	.12	.40
Finland	18.6	.08	.13
France	24.5	.18	.02
Germany/East	20.9	.09	.07
Germany/West	24.7	.12	.10
Greece	27.4	.20	.08
Hong Kong	38.1	.08	.07
Hungary	24.9	.16	.28
Iceland	20.9	.07	.24
Ireland	25.6	.13	.18
Italy	18.8	.16	.45
Netherlands	24.2	.07	.18
New Zealand	26.4	.13	.41
Nigeria	38.7	.55	.43
Norway	22.3	.08	.52
Philippines	47.2	.10	.23
Portugal	26.7	.18	.05
Singapore	35.1	.20	.34
Slovenia	24.3	.09	.21
Spain	29.7	.11	.29
Sweden	25.1	.10	.63
Switzerland	17.3	.15	.09
Thailand	45.8	.17	.29
Trinidad & Tobago	33.1	.20	.13
USA	23.9	.13	.18
Venezuela	29.6	.17	.36
Zimbabwe	40.0	.37	.41
Overall Mean	27.85	.16	.27

similar in size to those in several European countries, including France, West Germany, and the Netherlands, as well as in New Zealand. However, classes are significantly smaller in Italy, Switzerland, Denmark, and Belgium. What is especially interesting is that a great many countries in the survey have classes that are similar in size at primary and second level, or are actually smaller at primary level, while in Ireland primary classes are significantly larger than second-level classes

The proportion of students that teachers indicated were in need of special assistance in reading in Ireland (.13) is close to the overall average and is exactly the same as the figure for the United States and New Zealand. The proportion of students whose needs are being met in Ireland is rather low (.18).

An important question is the extent to which the judgments of teachers about the need for remedial help can be considered valid. Lundberg and Linnakylä (1993) addressed this question by examining correlations between the number of students in a class identified as requiring remedial help and the average level of performance of the class on the literacy tests. When such correlations were computed for each country, coefficients were substantial and significant in nearly all cases. It is of interest that the highest correlation (.70) was found for the judgment of Irish teachers of 14-year olds.

Effects of Class Size and Remedial Provision

On the basis of the evidence that we considered above, it might be expected that countries with large class sizes would have lower levels of achievement, especially in Population A. However, this was not the case (Elley, 1992). In fact, as indicated in Chapter 1, other factors seem to covary with class size in such a way as to produce a positive association between class size and achievement; countries with large class sizes have higher levels of achievement.

The outcome of the within-country study of effective schools (Postlethwaite & Ross, 1992) is also worthy of note. In the 12 countries in the study, it was consistently found that effective schools tend to have relatively larger classes than less effective schools. This suggests that there may be an unidentified factor associated with an unfavourable pupil-teacher ratio which has a greater (and more favourable) impact on performace than does class size. One possible explanation is that a (perhaps unstated) policy exists to allocate teaching resources to pupils with greatest need so that those with relatively lower achievements are in smaller classes.

The same type of explanation might account for the association between effective schooling and access to remedial teachers. The within-country study shows that in ten countries (including Ireland) the more effective schools tend

to have a relatively lower ratio of remedial teachers to students (i.e., fewer remedial teachers for a given number of students) (Postlethwaite & Ross, 1992). A likely explanation for this finding is that one of the criteria for the appointment of remedial teachers is that many students in the school are low achievers. In other words, the association reflects the policy of targeting remedial resources towards areas of greatest need.

At the same time, the issue of the effects of access to remedial teachers is worthy of examination in future work. The best evaluations of the effects and effectiveness of remedial reading placements generally indicate some disquieting outcomes. Slavin's (1987) review indicates that the few well-designed studies of remedial programmes suggest an average gain of only about three percentile points for participants. On the other hand, a well-controlled study carried out in Limerick showed that in certain circumstances remedial instruction could enhance the academic performance of low-achieving pupils (Kellaghan, 1974). Evidence of effects on indices other than test scores (e.g., attendance improvement and return to the regular classroom with no further need for remedial support) is even less heartening (Johnston & Allington, 1991).

TEACHERS' PROFESSSIONAL DEVELOPMENT

It will be recalled from the description of the international reports in Chapter 1 that length of teacher education was one of the factors that discriminated between high and low achieving countries. Here we examine the question of teachers' professional development, focusing on two aspects that were of special interest, teachers' reading and inservice education.

Importance of Teachers' Reading and Inservice

Despite the potential significance of the extent of teachers' personal reading (Burke, 1992), information on the association between teachers' reading and their style of teaching is meagre. Even less seems to be known about any effects teachers' reading might have on pupil achievement. There are a number of ways in which teachers' reading might be important. For example, teachers who read in the professional area might be conversant with new approaches to teaching and learning. Mastery of a subject area resulting from reading might enhance subject competence and thus impact on teaching, especially in second-level schools. Teachers' reading might also be influential in less direct ways. A large body of evidence testifies to the importance of teacher enthusiasms for teacher effectiveness (Brophy & Good, 1986). Might enthusiasm for a subject that is

generated through reading carry over into teaching? There may also be modelling influences associated with reading. Teachers who talk about books that they have read might influence their pupils to read just as any form of behaviour may be learned in accordance with social learning principles (Bandura, 1986).

International Comparison of Reading and Inservice (Population A)

Teachers' Reading, Population A. Information on various aspects of inservice education and teachers' professional reading in the countries in Population A is displayed in Table 4.3. The first two columns are concerned with inservice education relating to the teaching of reading and indicate (i) the average number of hours spent on the further study of the teaching of reading after initial teacher qualification and (ii) the frequency of attendance at inservice courses in reading over the previous three years. These may be regarded as two significant indicators of teachers' participation in inservice education.

Irish teachers report very low levels for both indicators of inservice education. Teachers in only four countries had spent less time than teachers in Ireland on the further study of reading since qualification. Further, Irish teachers are at the very bottom in terms of frequency of attendance at inservice courses related to reading over the preceding three years. Teachers in none of the 27 countries reported a lower frequency of attendance (note that 1 = never on the scale of frequency).

Three indicators of teachers' professional reading are shown in Table 4.3. Teachers were asked to indicate on a 5-point scale how frequently they read 'articles on reading' and 'articles on teaching' (1 = almost never to 5 = about once a week or more). It would appear that, in general, Irish teachers read such articles rather less frequently than many of their colleagues in other countries. Teachers in only three countries indicated that they read articles on reading less frequently than Irish teachers, while teachers in four countries indicated that they read articles on teaching less frequently.

The final column in Table 4.3 provides comparisons on the total professional reading of teachers (articles on education as well as reading of arts, science, literature, etc). On this index, Irish teachers again score low; teachers in only Belgium (French) and Singapore report levels of reading that are lower.

The breakdown of reported frequencies of professional reading in Table 4.4 provides a more precise picture of the reading of Irish teachers. While Irish third class teachers report reading novels, short stories, and children's books relatively frequently, they tend to read articles on teaching and reading rather infrequently. For example, a significant minority (over 18%) said that they read articles on

teaching once a year or less, while nearly two-fifths read articles on the teaching of reading once a year or less frequently.

TABLE 4.3

MEAN VALUES OF MEASURES OF EXTENT OF INSERVICE AND TEACHERS' READING, BY COUNTRY, POPULATION A

	Further Study of Reading	Frequency Inservice in Reading	Frequency of Reading Articles on Reading	Frequency of Reading Articles on Teaching	Total Professionnal Reading (Total)
Belgium (French)	32.81	1.4	2.3	3.6	23.64
Canada (BC)	48.35	4.1	3.7	4.0	31.31
Cyprus	74.18	2.7	2.9	3.3	25.82
Denmark	78.37	2.6	3.3	4.2	27.31
Finland	22.48	1.4	3.3	4.1	28.43
France	43.96	1.5	2.7	3.7	24.70
Germany/East	66.35	3.3	3.1	3.0	25.79
Germany/West	41.15	2.1	2.4	2.7	25.39
Greece	79.26	2.7	3.0	3.2	26.41
Hong Kong	29.40	1.5	3.2	3.2	26.21
Hungary	81.87	2.9	4.0	4.5	32.93
Iceland	22.19	1.6	2.9	3.7	25.67
Indonesia	39.64	1.9	3.9	4.2	34.34
Ireland	33.47	1.3	2.7	3.3	24.45
Italy	71.93	2.1	3.9	4.3	29.80
Netherlands	51.36	1.9	2.5	3.5	25.39
New Zealand	67.58	2.6	3.4	4.0	29.03
Norway	60.93	2.3	3.5	4.2	26.82
Portugal	75.13	2.2	3.2	4.0	25.87
Singapore	39.01	2.0	2.8	3.1	24.13
Slovenia	43.84	2.8	3.4	4.3	32.70
Spain	62.79	1.9	3.4	4.0	25.51
Sweden	59.26	2.9	3.7	4.3	28.02
Switzerland	39.78	1.7	2.7	3.3	24.99
Trinidad & Tobago	41.69	1.9	3.8	3.8	31.28
USA	68.38	3.1	3.5	3.9	28.72
Venezuela	38.51	1.7	3.8	4.3	28.91

Note. Further study of reading is the mean number of hours that teachers report having spent on the study of reading since initial training. Scale was from none to 100 hours. *Frequency of inservice* is measured as follows: 1 = never, 2 = once, 3 = twice, 4 = three times, 5 = four or more times. *Frequency of reading* is measured on a scale of 1 to 5 (1 = never or almost never to 5 = about once a week or more). *Total Professional Reading* is the sum of reading in all nine areas specified in Table 4.4 and is therefore on a scale from 9 to 45.

TABLE 4.4

PERCENTAGES OF TEACHERS REPORTING VARYING FREQUENCIES FOR PROFESSIONAL READING, IRELAND, POPULATION A

	Almost Never	Once a Year	Once a Term	Once a Month	Once a Week or More
Articles on teaching	4.4	14.0	34.1	37.2	7.9
Articles on reading	11.9	26.5	42.3	14.5	3.4
Books on history or politics	22.9	33.1	21.2	15.3	7.1
Books on the arts	42.7	21.5	16.5	14.0	4.9
Books on science	47.9	24.8	8.2	9.9	2.4
Novels or short stories	2.4	8.3	10.7	29.8	47.1
Poems	19.8	10.7	27.3	24.8	14.0
Plays	47.1	23.1	12.4	9.9	2.4
Children's books	9.0	9.9	26.4	23.1	28.1

Note. Table entries are percentages indicating frequency of reading. Percentages may not add to 100 because of missing data.

Teachers' Reading, Population B. Unfortunately the information sought from the teachers of Population B students did not include questions on inservice education. However, Population B teachers were asked about the frequency of reading in the same areas as Population A teachers except that an item on 'articles on literature' was substituted for 'children's books.'

The international comparisons in Table 4.5 show the frequency of teachers' reading of articles on teaching, articles on reading, and total professional reading (the sum of the various kinds of reading listed in Table 4.6). In general, it would seem that the picture for Population B teachers is rather similar to that for Population A teachers. Compared to teachers in other countries, Irish teachers of 14-year olds reported reading relatively less in 'educational areas' (articles on teaching and reading). Only teachers in East and West Germany indicated that they read articles on teaching less frequently than Irish teachers. Similarly, only two countries are below Ireland in terms of frequency of reading articles on reading. For the other areas of reading, Irish teachers tend to be somewhat nearer to the average of other countries.

TABLE 4.5

MEAN VALUES OF MEASURES OF EXTENT OF TEACHERS' READING, BY COUNTRY, POPULATION B

	Articles on Teaching	Articles on Reading	Professional Reading (All areas)
Belgium (French)	3.5	2.6	24.8
Botswana	4.4	4.7	34.9
Canada (BC)	3.8	2.6	28.4
Cyprus	3.7	3.4	29.9
Denmark	4.3	3.3	29.5
Finland	3.9	2.7	30.0
France	3.6	2.7	28.8
Germany/East	2.8	2.8	28.3
Germany/West	2.8	1.9	26.4
Greece	3.3	3.0	27.8
Hong Kong	3.6	3.6	28.7
Hungary	4.3	3.5	33.0
Iceland	3.5	2.3	26.8
Ireland	3.1	2.3	26.8
Italy	4.0	3.7	29.2
Netherlands	3.2	2.2	29.1
New Zealand	3.4	2.3	28.9
Nigeria	3.7	4.4	24.1
Norway	4.1	3.2	27.6
Philippines	4.0	4.4	35.5
Portugal	3.7	3.2	28.3
Singapore	3.1	3.3	24.6
Slovenia	4.2	3.3	32.2
Spain	4.2	3.2	27.9
Sweden	4.1	3.1	30.0
Switzerland	3.2	2.4	26.5
Thailand	3.7	3.7	32.3
Trinidad & Tobago	3.3	3.3	30.3
USA	3.6	2.7	28.7
Venezuela	4.2	4.0	29.7
Zimbabwe	4.3	4.4	34.2
Overall Mean	3.7	3.1	29.1

Note. Table entries are mean scores for each country. For columns 1 & 2, these are derived as follows: 1 = never, 2 = once a year, 3 = once a term, 4 = once a month, 5 = once a week. The entries in the third column are summed across all nine areas specified in Table 4.6 to form a professional reading total score (min. = 9, max. = 45)

TABLE 4.6

PERCENTAGES OF TEACHERS REPORTING VARYING FREQUENCIES FOR PROFESSIONAL READING, IRELAND, POPULATION B

	Almost Never	Once a Year	Once a Term	Once a Month	Once a Week or More
Articles on teaching	7.1	15.6	39.1	31.6	5.4
Articles on reading	29.3	23.6	26.5	10.1	3.4
Books on history or politics	16.7	33.9	26.0	20.9	9.2
Books on the arts	16.5	31.8	20.6	17.4	7.7
Books on science	58.0	21.6	8.5	4.1	1.9
Novels or short stories	0.0	1.9	14.3	35.1	47.3
Poems	4.8	5.3	21.4	25.8	40.1
Plays	21.3	18.3	29.9	18.7	10.4
Articles on literature	1.2	11.9	16.4	26.8	43.7

Note: Table entries are percentages of teachers who indicated that they read such material. Percentages may not add to 100 because of missing data.

The actual frequency with which Irish teachers read a variety of kinds of material is shown in Table 4.6. Overall, there was a general tendency to read in areas of 'content' in English (novels, plays, and poems) while only a small percentage seemed to read material relating to education on a regular basis. A significant minority almost never read material on educational issues related to reading. For example, almost 30% said that they never read articles on reading.

Importance of Indicators' of Teachers' Professional Development

The significance of teachers' reading for their instructional behaviour was taken up in the Lundberg and Linnakylä (1993) study, which sought to establish the extent to which teachers' reading was related to style of teaching and instructional practices. Three kinds of teachers' reading were distinguished: (i) educational reading (articles on teaching, articles on reading), (ii) expository reading (books on history, science, art, etc.) and (iii) literature reading (novels, short stories, poems, plays, etc.).

For Population A, a significant association emerged between teachers' reading and instructional strategies in several countries. An outcome that was especially interesting was the correlation between frequent reading in any domain and certain characteristics of teaching style. Teachers who read relatively frequently in education, literature, or science, tend to be more likely to do each of the following:

(i) to have more frequent discussion about books, (ii) to know students' interests and make use of such interests, (iii) to place a greater emphasis on library skills, and (iv) to make more use of self-prepared material. It could be said, therefore, that teachers who read more tend to teach in a style that suggests that reading is a constructive and active process. Furthermore, they seem to teach in a way that is more child-centred than do teachers who read rather less.

A number of domains of teacher reading were found to be related to specific instructional practices. For example, teachers' educational reading is associated with relatively greater frequency of certain forms of comprehension instruction, including eliciting predictions and emphasizing the higher-order skills of generalization and inference. Teachers' expository reading was found to relate to frequency of teaching exposition and story comparison while teachers' reading of literature is associated with more frequent reading of plays and drama and with dramatizing stories.

Less information was collected on instructional strategies in Population B than was the case for Population A. However, significant correlations emerged in a number of countries between teachers' reading and the activities that are assigned to students. For example, there is a correlation between teachers' own expository reading and frequency of teaching expository material in 20 countries. Teachers' readership (in any domain) is associated with more frequent discussion of books as well as more frequent study of the style and structure of texts. It was also found that teachers who read more frequently tend to encourage students to talk and write about what they had read. In other words (as in the case of Population A), Population B teachers who read frequently tend to have a view of reading that emphasizes its active, constructive, and social character.

These findings are potentially of great significance. As will be shown in Chapter 5, there has been a major change in what is considered appropriate under the umbrella of 'comprehension instruction.' The most worthwhile strategies for actually assisting children in the skills of comprehension involve such activities as making predictions and teaching generalizations and inference. The fact that teachers' reading has been shown to relate to their likelihood of using such strategies is, therefore, particularly noteworthy.

Teachers' Reading And Pupil Achievement. The within-country analysis of effective schools also shows that in a number of countries, teachers in more effective schools tend to score higher on the teacher reading indicators than do their counterparts in less effective schools. Specifically, in Population A in Ireland, teachers in more effective schools tend to read more in educational areas than do teachers in less effective schools (Postlethwaite & Ross, 1992).

EFFECTIVE MANAGEMENT OF SCHOOLS

Evidence on the Importance of Management

There is a burgeoning literature on the importance of leadership management in schools. Two sets of findings emerge as being particularly noteworthy: the importance of co-ordination of effort within the school and the importance of the relationship of the school with parents and community.

The literature review by Good and Brophy (1986) on the characteristics of effective schools concluded that co-ordination and management are important features of such schools. In more successful schools, curriculum and instructional programmes are interrelated so that classroom educational objectives, the content of teaching activities, and the measurement of pupils' performance are all streamlined in a way that ensures that the efforts of teachers are consistent and additive.

This kind of co-ordination has a number of elements (Good & Brophy, 1986). First, it requires that schools have clear instructional goals from which can be derived the objectives and content of instruction. Secondly, it requires that major differences should not occur between teachers in a school in the allocation of time to the same content. Thirdly, it requires that tests and examinations should be co-ordinated in ways that ensure that the test results accurately reflect student learning. Fourthly, there is considerable evidence that, in effective schools, principals have a key role in co-ordinating instructional activities. While there is no suggestion that 'the great principal' is needed, there are indications that principals need to take a proactive, leadership role, rather than a reactive, administrative, and disciplinary one, especially in relation to academic matters. It is also worth noting that a proactive leadership role for the principal is not in any way antithetical to a democratic process in decision-making by staff. What may be needed is 'collaborative planning, shared decision making and collegial work in a frame of experimentation and evaluation' (OECD, 1989, p. 126).

Evidence for the significance of parental involvement is found in several studies, including evaluations of preschool programmes (Kellaghan & Greaney, 1993; Kellaghan, Sloane, Alvarez, & Bloom, 1993). Ideally, the involvement of parents should be on a partnership basis. However, even programmes that involve parents in a supportive but subservient role have shown positive outcomes. What seems most important about parental involvement is that it needs to be well planned and enduring (CMRS, 1992).

There is also evidence that community links make for more effective schools. In a study of 1015 schools in the United States, it was shown that students in Catholic and other private schools performed better than students in public

schools on a range of standardized tests even after allowance had been made for differences in family background (Coleman & Hoffer, 1987). The authors explained the difference in terms of the relationship between the school and the community.

International Comparisons of Principal's Role

Principals in schools in the present study were given a list of eight activities and asked to rate their importance in their work. The percentage of principals that assigned a particular rank to each of the activities is shown in Table 4.7. From this it can be seen that two activities were regarded as being relatively more important than others: discussion of educational objectives with staff and administrative tasks. In fact, the activity of discussing objectives was rated as slightly more important, overall. At the other extreme, representing the school at official meetings and contacts with the local community (including parents) were regarded as least important. Activites that were ranked as being of moderate importance include pastoral care, evaluation of teachers, and activities aimed at the professional development of teachers.

International comparisons for three of these items are shown in Table 4.8. The figure given for each country is the mean rank (1 = most important, 8 = least important). The moderate ranking given to 'evaluation of teachers' by Irish

TABLE 4.7

PERCENTAGES OF PRINCIPALS GIVING VARIOUS RANKINGS TO MANAGEMENT ACTIVITIES, IRELAND, POPULATION A

	Percentage of Principals Giving Rank							
	1	2	3	4	5	6	7	8
Representation of school at meetings	0.0	0.4	1.5	2.2	5.8	7.0	11.1	72.0
Evaluation of staff	6.3	6.5	5.3	11.4	20.5	21.0	20.7	8.3
Contacts with local community (including parents)	0.0	10.0	23.6	21.2	14.0	11.0	17.1	3.0
Discussing educational objectives with staff	39.8	22.1	14.8	12.5	7.6	1.0	2.1	0.0
Administrative tasks	37.5	15.4	16.5	9.8	8.4	8.1	3.7	0.7
Using records of students' progress	1.9	3.9	9.2	20.0	16.4	22.0	21.6	5.0
Pastoral care	13.3	30.6	20.7	10.1	12.3	7.2	3.8	2.0
Professional development of teachers	4.7	15.6	9.6	14.1	15.8	19.4	16.4	4.4

Note. Table entries are mean rankings: 1 = most important, 8 = least important.

principals is similar to that for many countries. Their ranking of this activity is roughly in the middle by international standards. The ranking of 'discussing educational objectives with staff' by Irish principals is also similar to that for most other countries. In nearly all cases it was assigned to a high mean ranking. Similarly, principals in many countries in the survey gave a ranking similar to that given by Irish principals to 'administrative tasks.' However, in a small number of countries, the average ranking for this item was much lower than the rank awarded by Irish principals.

TABLE 4.8

MEAN RANKINGS OF IMPORTANCE OF MANAGEMENT ACTIVITIES BY PRINCIPALS, BY COUNTRY, POPULATION A

	Evaluation of Staff	Discuss Objectives With Staff	Administrative Tasks
Belgium (French)	6.0	3.1	3.0
Canada (BC)	4.1	2.3	4.0
Cyprus	4.2	2.9	2.6
Denmark	5.4	2.9	3.0
Finland	6.1	2.3	2.6
France	3.4	2.5	2.6
GermanyEast	5.6	1.7	4.7
Germany/West	5.0	2.2	4.1
Greece	1.6	2.1	1.8
Hong Kong	4.8	2.8	1.8
Hungary	3.7	1.3	5.9
Iceland	5.5	3.5	3.0
Indonesia	3.5	2.5	2.4
Ireland	4.8	2.3	2.7
Italy	4.8	2.4	2.2
Netherlands	5.1	3.5	2.2
New Zealand	4.7	2.8	3.8
Norway	5.2	2.2	2.8
Portugal	5.6	2.9	4.7
Singapore	4.3	1.6	4.7
Slovenia	5.1	1.4	5.6
Spain	5.5	2.2	3.6
Sweden	4.4	2.0	4.5
Switzerland	---	---	---
Trinidad & Tobago	4.4	2.2	2.9
USA	3.8	2.8	3.9
Venezuela	3.9	3.3	3.4
Overall Mean	4.6	2.5	3.4

Note. Table entries are mean rankings: 1 = most important, 8 = least important.

Relationship between Management Factors and Achievement

While the cross-national comparisons did not demonstrate any strong effects of management on achievement, within-country analyses did indicate that management factors are related to achievement in many countries in Population A (Postlethwaite & Ross, 1992). Furthermore, degree of parental support, as perceived by the principal, is the strongest factor differentiating effective from less effective schools. (Note that was *not* the item regarding the importance the principal attached to contacts with parents and the community.)

It also emerged that a number of factors relating to the activities and involvement of the principal differ for more and less effective schools. One such factor is 'principal engagement,' which encompasses the extent to which teachers perceive themselves to be evaluated by the principal and the extent to which the principal is involved in the discussion of standards, student achievement, methods of teaching, and content of subjects taught. In other words, one of the factors associated with school effectiveness is the extent to which teachers felt that the school principal is engaged in *their* work.

A related finding from the Postlethwaite and Ross analysis was that a number of the principal's priorities are associated with more effective schools. Schools in which the principal gives a high priority to 'discussing educational objectives with teachers,' 'evaluation of staff,' and 'contacts with the community' tend to be more effective than schools where the principal does not attach such a high priority to such functions.

CONCLUSION

Irish classes tend, by international standards, to be rather large in primary schools and to be around the international average in second-level schools. Remedial services, however, tend to be somewhat better at primary level; a higher proportion of children who need remedial help with reading are catered for at primary than at second-level. The response of the system to problems at primary level has been to try to assist individual pupils with learning problems by appointing more remedial teachers.

There may well be other grounds for the employment of remedial teachers in schools, for example, where large classes make the management of teaching very difficult. Indeed, a case can be made that the individual attention required by children with reading problems cannot be made available in regular classroom conditions as they currently exist. However, unqualifed enthusiasm for remedial teaching as a solution to reading problems is not warranted by current evidence.

The picture that emerges from the present study is that Irish teachers fare poorly in terms of continuing professional development insofar as participation in inservice education and time devoted to reading can be taken as indices of that development. This should not be taken as criticism of teachers but rather as a reflection of the failure to develop appropriate structures for such development. In addition to the absence of a systematic approach to inservice, there are a number of features that hamper teachers' learning and development. As will be evident from Chapter 6, very few Irish teachers have access to a professional library. It could also be said that there is a dearth of professional publications that are specifically aimed at practising teachers. These findings also call into question some aspects of preservice education, since one must assume that some of the beliefs and attitudes that are relevant to later professional development have their origin in these years.

Irish principals, in common with their colleagues in other countries, tend to give a high priority to discussion of objectives with staff and administrative tasks. However, representing the school at official meetings and contacts with the local community are considered to be least important. There are indications from other studies that principals' priorities are an important feature of school effectiveness.

Chapter 5. Features of Reading Instruction in Irish Schools

We describe in this chapter a number of aspects of aims, learning activities, and assessment relating to reading instruction in Irish schools. The resulting profile is not meant to be exhaustive but rather to indicate some ways in which the experiences of teachers and students in Irish schools differ from those of their counterparts in other countries. Most of the results will be based on the findings from Population A (third class, primary).

The following features of reading instruction are examined: (a) teachers' ratings of the aims of reading instruction; (b) the emphasis based on various kinds of student activities and teachers' instructional strategies; and (c) classroom assessment. For each one, the significance of the underlying issues is first examined by reference to relevant literature. This is followed by a comparison between Irish classrooms and classrooms in other countries. Finally, the relationship between the feature in question and other outcomes (emerging from the international reports in this series) is examined.

AIMS OF READING INSTRUCTION

Before considering the significance of aims and especially the importance of emphasizing different kinds of aims in reading instruction, the importance of the distinction between 'higher-order' and 'lower-order' levels of reading will be considered.

Significance of Different Kinds of Aims

The relationship between teachers' endorsement of various kinds of aims and pupil achievement is not a straighforward one. The most relevant research findings are those that have examined the association between teacher behaviours that reflect different kinds of aims and student achievement. In particular, a good deal of attention has been given to teacher behaviours that place greater emphasis on higher rather than on lower-level cognitive skills.

A considerable body of evidence supports the significance of this distinction in relation to teachers' questioning. Redfield and Rousseau (1981) included 20 studies of teachers' use of 'higher' and 'lower' cognitive questions in a meta-analysis to examine the relationship between level of teacher questioning and student achievement. Higher-order cognitive questions were defined as those that require pupils to manipulate information in order to create and support

a response while lower-order questions were defined as those that merely require verbatim recall or recognition of factual information. Results show relatively greater gains in achievement to be associated with higher-level cognitive questions.

However, the evidence on this point is by no means clearcut. Soar and Soar (1979) summarize the results of several process-outcome studies in which student characteristics (including achievement) were measured early in the school year, classroom processes half-way through the year, and student characteristics again at the end of the year. A distinction was made in the study in terms of control of pupils' thinking processes, that is, the degree to which pupils were allowed or encouraged to confront the subject matter at a variety of cognitive levels. The results indicate that high-level cognitive activities tend to be positively related to achievement gains in high socioeconomic status pupils in grades 3 to 6. However, in the case of first grade and low socioeconomic status pupils, achievement gains tend to be associated with relatively greater emphasis on recitation and drill and with activities characterized by giving and receiving information.

International Comparisons of Aims

Population A teachers were given a list of 12 aims and asked to rank five (only) in the order of the importance that they attached to them. Table 5.1 shows the mean ranking for seven of the aims. Note that the higher numerical value indicates greater importance. Furthermore, given that any individual can only select five aims, the mean overall rankings are rather low.

It can be seen that Irish teachers rated the aim of 'developing a lasting interest in reading' quite highly (mean = 3.2). This is above the mean for most countries in the study. However, New Zealand teachers gave this aim an even higher rating. High ratings were also given by teachers from Norway and Sweden. In contrast, teachers in Belgium (French), France, and the Netherlands gave a relatively low rating to 'a lasting interest in reading.' The second aim in Table 5.1 relates to 'increasing students' reading comprehension' and was rated highly in most countries. Irish teachers rated this aim relatively highly (slightly less than developing a lasting interest in reading).

The next aim listed in Table 5.1 concerns 'the development of research and study skills.' Irish teachers rated this aim rather low (0.7), as did teachers from a great number of other countries. Teachers in the Nordic countries, with the exception of Finland, rated the aim even lower than teachers in Ireland.

The rating given by Irish teachers to 'extending pupils' vocabulary,' while below the means for 'developing a lasting interest in reading' and 'improving

pupils' reading comprehension', is high relative to other countries in the study (mean 1.8). In fact, only teachers in Spain gave a higher rating to this aim. 'The development of pupils' critical thinking' was not rated very highly by Irish teachers; their average rating (0.7) is below the international average. Teachers

TABLE 5.1

TEACHERS' MEAN RATINGS OF IMPORTANCE OF AIMS OF READING INSTRUCTION BY COUNTRY, POPULATION A

	Lasting Interest in Reading	Increase Reading Compre-hension	Develop Research Study Skills	Extend Vocab-ulary	Develop Critical Thinking	Improve Word Attack Skills	Expand World Views
Belgium (French)	2.0	3.2	1.8	1.2	1.4	0.4	0.9
Canada	4.4	2.5	0.8	0.8	2.0	0.5	0.2
Cyprus	2.6	3.6	1.9	1.1	2.5	0.3	0.5
Denmark	3.5	2.3	0.2	1.1	1.3	0.3	1.9
Finland	3.4	2.7	3.2	0.7	1.1	0.1	0.6
France	2.0	3.5	1.9	0.8	1.0	0.5	0.6
Germany/East	2.9	1.3	2.7	0.3	1.1	0.5	1.2
Germany/West	3.1	1.7	2.1	0.8	1.3	0.2	1.2
Greece	2.6	3.3	1.2	1.8	2.6	0.5	0.5
Hong Kong	2.5	3.2	0.6	1.3	2.4	0.6	0.6
Hungary	1.8	3.2	2.4	1.3	0.1	0.4	0.5
Iceland	3.0	3.1	1.0	1.4	0.5	0.2	1.1
Indonesia	1.0	2.2	0.7	1.2	0.8	1.3	0.9
Ireland	3.2	3.0	0.7	1.8	0.7	1.4	0.2
Italy	3.4	2.8	1.2	1.5	2.0	1.0	0.9
Netherlands	2.4	2.8	0.4	1.6	1.2	0.3	0.4
New Zealand	4.0	2.5	1.2	0.5	0.8	0.9	0.1
Norway	3.6	2.6	0.7	1.1	1.2	0.1	0.6
Portugal	3.4	3.1	2.0	1.6	1.3	0.5	1.0
Singapore	3.4	2.7	0.3	1.8	1.2	0.7	0.4
Slovenia	2.7	2.6	1.5	1.6	1.0	0.9	1.1
Spain	3.4	3.8	0.9	2.0	0.8	0.1	0.4
Sweden	3.4	2.5	1.2	1.2	0.7	0.2	0.7
Switzerland	3.5	2.9	0.7	1.3	1.1	0.1	1.1
Trinidad & Tobago	3.0	2.8	1.1	1.4	1.4	1.4	0.2
USA	3.1	3.5	0.7	1.6	2.0	0.8	0.2
Venezuela	0.6	1.2	0.8	1.2	1.2	1.8	0.7
Overall mean	2.9	2.8	1.3	1.1	1.3	0.6	0.7

Note. Higher numerical value = More important.

in other European Community countries rated this aim slightly higher than did Irish teachers. An even greater difference between Irish teachers and those from other countries is to be found in ratings of 'word-attack skills.' While this aim was rated extremely low by teachers in almost all countries, it received a relatively high rating from Irish teachers (1.4). In fact, only teachers in Venezuela gave a higher rating than Irish teachers. Finally, the very broad aim of 'expanding pupils' world views' generally received rather low ratings, especially from Irish teachers.

In general, there is remarkable similarity between teachers across countries in their rating of aims. Irish teachers, however, tend to attribute greater importance to basic skills, such as word attack, and extending pupils' vocabulary than teachers elsewhere. At the same time, they rate aims relating to expanding world views and critical thinking somewhat lower than their colleagues in other countries.

Importance of Rating of Aims

Associations between teachers' rating of aims and student achievement were examined in cross-national analyses (Lundberg & Linnakylä, 1993). The rated aims were divided into two main groups, one of which indicated emphasis on skills (including improving students' comprehension, extending students' vocabulary, improving word-attack skills) and the other of which indicated emphasis on encouragement and development of reading interests (including developing an interest in reading, expanding students' world views, making reading enjoyable). Generally, the high achieving countries gave a relatively higher priority to aims relating to encouragement and development of interests than to skill-oriented aims. By contrast, in Ireland (as well as in the Netherlands), skill aims were considered to be more important than interest aims.

Perhaps what is most remarkable in the overall findings is the similarity across countries in the ranking of teaching aims. It may be that the reading task has inherent demand characteristics that invoke almost universal agreement on what is important to teach. However, while teachers in various countries may agree on the relative importance of aims, it does not follow that the teaching strategies and instructional activities will show the same correspondence across countries.

INSTRUCTIONAL ACTIVITIES AND STRATEGIES

The information presented so far has been concerned with the context of instruction and the aims that teachers regard as most important. Information was also sought on instructional activities and strategies. While the distinction is

somewhat arbitrary, in this survey activities refer to pupils' behaviours in the pursuit of learning objectives, while strategies refer to teachers' acts. There was, however, no actual observation of instruction in the literacy study. The conclusions reached in relation to this matter (and the others discussed here) are based exclusively on questionnaire information.

Significance of Instructional Activities

Durkin's (1979) work on reading comprehension instruction in middle-grade classrooms suggested that there was very little that was 'instructive' about the learning activities being pursued in many classrooms. Rather, the activities consisted of giving students opportunities to demonstrate their skills by answering questions, completing workbook pages, or taking tests. Durkin also found that little was offered in the way of helping students to know *how* to actually carry out any of the skills that underlie comprehension. His work, more than any other, motivated researchers to carry out research to help identify the instructive elements of instruction.

One line of thinking that has flown from subsequent research on comprehension instruction has emphasized the need for the active involvement of readers in the reading process. As a result of this research, several strategies have been developed to get students actively involved in the act of comprehending, which involve *self-questioning*, *generative learning*, and *self-monitoring*.

Wong's (1985) review of research on *self-questioning* strategies of instruction concluded that such strategies often contribute towards the understanding of text. She also concluded, however, that it is not self-questioning *per se* that is beneficial but the cognitive processes that are induced by one's own questions (e.g., making inferences, monitoring understanding, attending to text structure). Wittrock and his associates (e.g., Linden & Wittrock, 1981) use the term *generative learning* to describe how comprehension can be improved when readers build relationships among various parts of a text and between a text and their background knowledge and experiences. *Self-monitoring* of one's comprehension involves the use of procedures to check whether or not comprehension is occurring and the employment of corrective strategies when it is not. A body of work by Miller and her associates (e.g., Miller, 1987) suggests that both average and below-average readers can improve their ability to monitor their comprehension through self-instructional training and that such monitoring results in subsequent improvement in comprehension. The studies of Morgan (1981, 1985) demonstrate strong motivational and learning effects of

self-monitoring of private study, especially if the monitoring is carried out with reference to proximal subgoals rather than long-term aims.

International Comparison of Instructional Activities and Strategies

Data on the frequency of pupils' involvement in 27 kinds of reading activities as reported by Irish teachers in Population A are presented in Table 5.2. The activities represent different levels of reading, ranging from the decoding of letters and words to the comprehension of books and plays.

Irish teachers seem to place a relatively high emphasis on the learning of phonics and word-attack skills. Over three-quarters involve their pupils in such activities either daily or once/twice a week. However, the activity that was most frequently engaged in by pupils is answering comprehension exercises in writing. Over 96% of teachers involve pupils in such exercises at least once a week. Other activities in which pupils are involved frequently are listening to other pupils reading aloud to the class, listening to the teacher reading aloud to the class, learning new vocabulary from texts, and reading in other subject areas.

There are a number of other activities in which teachers engage pupils fairly regularly, but not as consistently as those mentioned above. Of particular interest are some learning activities that are similar to those that have been shown in recent research to promote comprehension, e.g., making predictions during reading, looking for a theme or message, making generalizations and inferences, and studying the style or structure of a text. About half of the sample of teachers indicated that they involve pupils in these activities about once/twice a week or more often.

Finally, there are a number of activities in which pupils are involved relatively infrequently. These include listening to pupils reading aloud to small groups or pairs, discussion of books they had read, and reading other pupils' writing. Given that such activities are based on a more active involvement than other frequently used activities, their reported low usage in classrooms merits further attention.

The frequency with which pupils in other countries are involved in a sample of six activities is shown in Table 5.3. The data indicate that Irish teachers spend a relatively large amount of time on letter-sound relationships (phonics, etc.). In fact the figure for Irish teachers is one of the highest in the survey. Even in countries where teachers report spending quite a substantial amount of time on this activity (e.g., United States and New Zealand), the reported frequencies are below the mean for Ireland.

TABLE 5.2

PERCENTAGES OF TEACHERS INDICATING THE FREQUENCY WITH WHICH THEY INVOLVE PUPILS IN READING ACTIVITIES, IRELAND, POPULATION A

	Almost Never	Once a Month	Once/twice a Week	Every Day
Learning letter-sound relationships	0.9	19.8	44.6	34.7
Word-attack skills	3.8	19.3	44.0	32.8
Silent reading in class	3.3	7.9	39.1	48.6
Answering tests of comprehension in writing	0.0	0.5	50.8	46.1
Independent silent reading in library	32.5	15.7	34.5	14.6
Listening to students reading to a whole class	3.7	2.2	27.3	65.5
Listening to students reading to small groups	47.1	21.9	11.4	17.3
Listening to teacher reading stories aloud	6.0	21.4	44.7	27.9
Discussion of books read by pupils	29.7	46.9	16.4	2.2
Systematic vocabulary learning (from lists)	38.9	16.7	23.2	19.2
Learning new vocabulary from texts	3.0	5.4	36.2	43.2
Learning library skills	29.5	37.5	26.0	5.6
Reading plays or drama	77.3	16.6	2.3	1.1
Playing reading games	17.3	49.4	29.9	2.8
Dramatizing stories	48.0	37.4	11.8	2.0
Drawing in response to reading	9.9	41.2	37.7	10.1
Orally summarizing their reading	11.4	32.2	37.2	19.2
Relating experiences to reading	23.6	29.3	30.3	15.7
Reading other pupils' writing	43.2	33.4	21.7	1.7
Making predictions during reading	35.8	19.4	33.6	10.4
Diagramming story content	62.8	22.5	11.8	1.9
Looking for the theme or message	9.6	27.8	44.3	15.4
Making generalizations and inferences	24.3	31.4	27.6	13.2
Studying the style or structure of a text	63.4	20.9	13.3	2.5
Pupil leading discussion about passage	39.1	32.8	18.7	8.5
Reading in other subject areas	0.8	8.7	36.8	53.3
Writing in response to reading	1.0	11.9	43.3	43.8

Note. Table entries are percentage of teachers who indicated that they involves pupils in such activities.
Percentages may not add to 100 because of missing data.

TABLE 5.3

THE MEAN FREQUENCY WITH WHICH TEACHERS INVOLVE PUPILS IN READING ACTIVITES, BY COUNTRY, POPULATION A

	Learning Letter-sound Relationships	Answering Comprehension Writing Tests	Discuss Books Read by Pupils	Learn Vocab. from Texts	Read Plays/ Drama	Read Other Pupils' Writing
Belgium (French)	.99	1.41	.40	.50	.06	.42
Canada (BC)	2.30	1.28	1.60	3.56	.05	1.95
Cyprus	1.04	3.29	.76	4.20	.22	1.45
Denmark	1.92	1.34	.46	2.37	.09	.35
Finland	.63	1.78	.44	1.47	.18	.54
France	.80	1.75	.33	1.69	.10	.44
Germany/East	.48	1.19	.59	1.80	.13	.30
Germany/West	.90	.90	.26	2.09	.09	.54
Greece	1.48	3.57	.58	4.20	.10	1.59
Hong Kong	2.84	1.21	.86	3.24	.27	.38
Hungary	1.41	3.75	1.17	4.03	.09	.32
Iceland	1.16	2.27	.38	2.16	.15	.12
Indonesia	2.29	2.04	2.17	2.55	.49	1.82
Ireland	2.45	3.15	.50	3.29	.13	.49
Italy	1.99	2.14	.62	3.94	.09	1.38
Netherlands	1.01	1.39	.47	3.17	.03	.30
New Zealand	1.58	1.19	1.40	1.81	.58	2.26
Norway	1.13	2.42	.45	3.13	.25	.48
Portugal	2.39	4.30	.92	4.11	.47	1.64
Singapore	1.50	1.61	.96	2.66	.26	1.26
Slovenia	1.97	1.95	.86	2.39	.22	1.64
Spain	1.78	2.83	.64	2.59	.28	1.23
Sweden	1.14	2.42	.86	1.97	.10	.93
Switzerland	1.02	1.17	.37	1.73	.04	.45
Trinidad & Tobago	3.07	2.03	.70	2.59	.25	.86
USA	1.89	2.17	1.09	2.67	.20	.97
Venezuela	2.65	2.59	2.24	2.83	.59	1.40
Overall mean	1.62	2.12	0.82	2.69	0.20	0.84

Note. The mean scores for each country have been recoded as follows: 0 = almost never, 0.25 = about once a month, 1.5 = about one/two times a week, 5 = almost every day

Irish teachers also involve children in answering comprehension tests in writing relatively more frequently than do teachers in other countries. Teachers in only four countries involve children more frequently in this activity (Cyprus,

Greece, Hungary, and Portugal). In all Scandinavian countries, especially Denmark, teachers involve their pupils less frequently. Teachers in the Netherlands, New Zealand, and the United States also indicated that they involve pupils less frequently on comprehension written exercises than their Irish counterparts .

The discussion of books which pupils have read takes place relatively less frequently than many other reading activities in nearly all countries. Irish teachers are similar to teachers in other countries for this type of activity. However, Irish teachers place a relatively greater emphasis on learning vocabulary from texts; teachers from only a small number of other countries (e.g., Portugal and Greece) spend more time on this activity.

It would seem that the final two activities (reading plays/drama and reading other pupils' writing) listed in Table 5.3 occur relatively infrequently in all countries. Overall, Irish teachers involve pupils less frequently than teachers in many other countries on these activities. This is especially true for reading other pupils' writing.

Instructional Strategies

Teachers were provided with a list of 13 instructional strategies and asked to indicate how often they used each in the teaching of reading (almost never to almost every day). Table 5.4 shows the percentages of Irish teachers indicating the frequency with which they used each of the strategies for reading (Population A).

Three instructional strategies seem to be used especially frequently: asking questions to assess text comprehension, asking questions to deepen understanding, and reading aloud to children. Most of the other strategies were used moderately frequently. For example, 'higher level' strategies, such as asking pupils to describe their understanding and comparing stories and poems, were used much less frequently than asking comprehension questions.

Mean scores for teachers' use of three representative instructional strategies (introducing the background of a passage before reading it, asking questions to assess text comprehension, and comparing stories, poems/tales) in all countries are provided in Table 5.5. Data in the table indicate that Irish teachers tend to 'introduce the background to a passage' moderately frequently by comparison with their colleagues in other countries. In this they are similar to teachers in Scandinavian countries. It can also be seen that teachers in the Netherlands use this strategy very seldom indeed. In contrast, New Zealand teachers report that they use this approach quite frequently.

Given that Irish teachers spend a large amount of time on written comprehension, it might be expected that they would frequently ask questions to assess text comprehension. This is indeed the case. Frequency of asking such questions by Irish teachers is among the highest in the countries in the survey. Teachers in Norway, Sweden, and Denmark ask such questions less frequently but teachers in Finland are close to the level for Ireland. Teachers in the United States also ask such questions frequently, although a little less frequently than in Ireland. On the other hand, there are some countries (notably New Zealand and the Netherlands) where the frequency of use of this strategy is only about half that for Ireland.

The final column in Table 5.5 provides comparisons on a 'high-level' instructional activity, viz., comparing stories poems/tales. The low frequency of use of this strategy in nearly all the countries in the survey is striking. In common with their colleagues in Scandinavian countries, and most EC countries, Irish teachers use this strategy infrequently. Teachers in only a few countries report a fairly high score in this area, notably in New Zealand and Canada (BC).

TABLE 5.4

PERCENTAGES OF TEACHERS INDICATING THE FREQUENCY WITH WHICH THEY USE INSTRUCTIONAL STRATEGIES FOR READING, IRELAND, POPULATION A

	Almost Never	About Once a Month	1 -2 Times a Week	Almost Everyday
Introduce background of a passage	6.4	30.9	47.8	11.7
Ask children to desribe their strategy for understanding	52.3	10.2	25.1	6.3
Encourage parents to be involved	27.7	23.9	16.7	28.5
Maintaining a graded sequence of difficulty	9.6	19.6	20.5	46.4
Ask questions to assess comprehension	0.0	0.7	11.5	85.3
Ask questions to deepen understanding	0.0	1.5	15.4	80.7
Show children how to understand a text	12.5	10.7	37.1	34.3
Compare stories and poems	23.4	40.9	25.5	7.7
Read aloud to children	2.3	13.1	35.9	45.1
Encourage parents to read	39.7	19.7	16.4	21.1
Encourage children to read more	0.0	6.5	30.9	59.4
Encourage children to use library more	2.9	14.8	38.4	39.8
Use teacher-prepared materials	16.4	37.3	30.3	12.4

Note. Table entries are percentages of teachers indicating how often they used a particular strategy.
Percentages may not add to 100 becuase of missing data.

TABLE 5.5

MEAN SCORES FOR TEACHERS' USE OF INSTRUCTIONAL STRATEGIES FOR READING, BY COUNTRY, POPULATION A

	Introduce Background Before Reading	Ask Questions to Assess Text Comprehension	Compare Stories Poems/Tales
Belgium (French)	1.22	2.61	.21
Canada (BC)	3.57	2.48	1.68
Cyprus	3.71	4.91	1.68
Denmark	1.01	3.14	.60
Finland	1.07	4.23	.67
France	1.46	3.23	.33
Germany/East	1.27	3.85	.61
Germany/West	.86	2.85	.43
Greece	4.00	4.98	1.94
Hong Kong	.95	2.69	.69
Hungary	3.96	4.79	.79
Iceland	.50	2.59	.31
Indonesia	2.05	2.53	.96
Ireland	1.43	4.55	.89
Italy	2.31	4.43	1.60
Netherlands	.56	1.94	.22
New Zealand	2.25	2.76	1.10
Norway	1.33	2.95	.53
Portugal	2.06	4.76	1.78
Singapore	1.72	2.98	.82
Slovenia	1.43	2.79	.66
Spain	2.25	3.96	.77
Sweden	1.48	2.96	.57
Switzerland	1.03	3.17	.36
Trinidad & Tobago	2.15	3.71	1.21
USA	2.57	3.80	1.21
Venezuela	2.15	4.13	1.89
Overall mean	1.86	3.47	0.90

Note. In calculating teachers' scores, responses were coded as follows: 0 = almost never, 0.25 = about once a month, 1.5 = about one/two times a week, 5 = almost every day

Effects of Instructional Activities and Strategies

It has to be acknowledged that the association between teachers' reports of their instructional strategies and student activities on the one hand and student achievement on the other is generally low. Of the various constructs depicted in

Tables 5.4 and 5.5, very few are related to student achievement in analyses (Lundberg & Linnakylä, 1993).

It will be recalled from Chapter 2 that factor analyses were carried out on the teaching strategies, resulting in the identification of the following constructs: comprehension instruction, phonics emphasis, student-oriented reading, taking students' interests into account, and teacher-centred instruction. The associations between these constructs and student achievement are weak. Comprehension instruction correlates significantly (and positively) with achievement in only three countries: Greece, Iceland, and Sweden (Lundberg & Linnakylä, 1993). The situation is even more complex in relation to emphasis on phonics. Such emphasis was found to correlate negatively with achievement in the United States and in Switzerland but positively in Indonesia, while no significant relationship was found in other countries.

The failure to find significant associations between teaching strategies and pupil achievement may be because the measures of teacher behaviour are based exclusively on self-reports. However, teachers' reports of strategies are likely to be only weakly related to their actual teaching. A related difficulty is that the 'desirable' kind of teaching behaviour is readily identifiable in most items. Further, the relationship between teacher strategies and student achievement is unlikely to be a straightforward one, since a variety of factors such as gender, social background, and scholastic ability are likely to affect the relationship.

ASSESSMENT

Significance of Assessment of Literacy

Calfee and Hiebert (1991) reviewed the effects of externally mandated standardized testing on literacy instruction in schools, concluding that such testing may have a positive influence when it fills a vacuum. Where a school staff lack a clear vision of curricular goals, the tests give direction and purpose. However, when a school staff already possess a sense of purpose, the imposition of standardized high-stakes testing 'can have a detrimental effect on teachers morale and may actually lower student achievement' (p.290). Evidence from Ireland, though not based on a high-stakes administration of tests, indicates that the provision to teachers of diagnostic information based on standardized tests may also have positive effects. The pupils of teachers who had received this information performed better in English reading than pupils whose teachers had not received the information. (Kellaghan, Madaus, & Airasian, 1982).

Compared to the use of standardized tests, information on teachers' informal approaches to the assessment of literacy or on the effects of these approaches is

harder to come by. Calfee and Hiebert (1991) examined the potential of four techniques for internal assessment (questioning and discussion, interviews and inventories, observations, and performance assessment and portfolios). While enthusiastic about the potential of such approaches for staff development and 'reprofessionalization,' they were unable to find any significant research to support the enthusiasm. However, more recent evidence has suggested positive effects of authentic assessment (O'Neil, 1992).

International Comparison of Aspects of Literacy Assessment

Table 5.6 provides comparative data for teachers of Population A in each country on their use of six representative types of assessment. (There were 20 questions on assessment in the questionnaire.) The data in the table indicate that Irish teachers tend to assess children rather frequently on the basis of exercises in workbooks, comprehension of text, and questions on material read. They tend to assess literacy much less frequently through teacher-made vocabulary tests, reading-study skills, or records of students' interest. In the case of reading and study skills, teachers in only four countries have a lower mean than Irish teachers, while for use of student records teachers in only two countries indicate that they use such forms of assessment less frequently than Irish teachers.

These comparisons provide some indication of the relative emphasis placed on different kinds of assessment in Irish schools. Basic aspects of reading are assessed frequently (especially comprehension of text) as well as skills normally tested in work-book exercises. In contrast, there is little emphasis on the assessment of the application of literacy skills (e.g., reading-study skills) or on the evaluation of the development of students' interests. It is unfortunate that no questions were asked about the teaching/assessment of spelling since in the writers' experience this is assessed rather frequently in Irish primary schools.

The particular emphases of Irish teachers on assessment seem to tie in with the finding on aims of reading instruction (discussed above), where a stress on lower-level skills is also apparent. It also supports the views expressed by the Primary Curriculum Review Body (1990) which suggested that an emphasis on 'reading to learn' was lacking. The value of workbook assessment depends greatly on the exercises that are included in the workbooks; it seemed to the Review Body that the exercises are often repetitive, mechanical, and unchallenging.

TABLE 5.6

MEAN SCORES FOR FREQUENCY OF TEACHERS' USE OF ASSESSMENT PROCEDURES, BY COUNTRY, POPULATION A

	Teacher Vocab. Tests	Exercises in Work-books	Freq. Assess Text Compr	Freq. Assess Reading Study-Skills	Use of Records of Students Interest to Assess	Use of Questions on Material Read to Assess
Belgium (French)	3.4	4.4	4.8	3.2	3.9	4.4
Canada (BC)	2.2	2.5	4.5	3.7	3.7	4.8
Cyprus	3.9	4.9	4.9	4.7	2.8	4.9
Denmark	2.0	4.7	4.7	3.5	3.8	4.8
Finland	2.9	4.8	4.2	3.7	3.7	4.8
France	3.3	4.2	4.8	3.1	3.9	4.4
Germany/East	3.1	4.0	4.5	4.5	3.0	4.7
Germany/West	2.3	4.0	4.5	4.0	2.7	4.6
Greece	4.2	4.9	4.9	4.9	3.3	4.5
Hong Kong	3.3	4.8	4.5	4.0	2.3	3.9
Hungary	3.6	4.7	4.6	4.4	2.8	4.9
Iceland	1.7	4.7	4.6	3.6	4.2	4.3
Indonesia	4.5	4.6	4.8	4.8	3.8	4.7
Ireland	2.9	4.8	4.9	3.6	2.5	4.9
Italy	3.9	4.8	4.9	4.4	4.1	4.9
Netherlands	2.1	3.8	4.2	3.0	2.6	4.5
New Zealand	2.2	3.7	4.0	3.9	3.2	4.7
Norway	3.7	4.8	4.6	4.0	3.1	4.8
Portugal	3.8	4.9	4.9	4.8	4.0	4.9
Singapore	3.6	4.9	4.8	3.7	2.7	4.6
Slovenia	4.0	4.9	4.9	4.6	3.7	4.9
Spain	2.5	4.9	4.8	4.2	3.4	4.8
Sweden	1.9	4.3	3.4	2.7	1.7	4.5
Switzerland	2.6	4.1	4.2	3.5	2.6	4.5
Trinidad & Tobago	4.5	4.8	4.9	4.5	3.4	4.9
USA	3.5	4.6	4.9	4.5	3.1	4.9
Venezuela	3.8	4.5	4.7	4.5	3.7	4.8
Overall Mean	3.2	4.5	4.6	3.9	3.2	4.7

Note. Scale was as follows: 1 = never or almost never, 2 = about once a year, 3 = about once a term, 4 = about once a month, 5 = once a week or more.

Effects of Assessment

Just as teaching strategies for reading are largely cognitive-linguistic acts which are situated in social and cultural contexts, so also are the various aspects

of assessment. This relativistic and contextual perspective should inform the findings on the effects of assessment.

In general, the relationships that have been found in the IEA reading literacy study between assessment practices and student achievement are either inconsistent or difficult to interpret. In between-country analyses, a negative relationship emerged between a heavy emphasis on assessment and student achievement (Lundberg & Linnakylä, 1992). However, a number of caveats must be entered before interpreting this finding. First of all, the teachers in a great many low-achieving countries rated highly all instructional behaviours and reports of assessment. It would seem that the tendency to provide 'socially desirable' responses was stronger in low-achieving countries. Another consideration is that a strong emphasis on assessment may reflect rather than contribute to low achievement. For example, in countries with low standards of achievement, teachers may emphasize and assess such skills as a first step in the improvement of children's literacy.

As in the case of instructional strategies, the information on assessment was obtained exclusively through self-reports. In addition to problems relating to the extent to which such reports relate to actual behaviour, there is also the issue that the effects of any kind of assessment system are likely to be moderated by such population characteristics as age, ability, and socio-economic background.

CONCLUSION

Irish teachers, in common with their colleagues in most other countries, rated comprehension and the development of a lasting interest in reading as the most important aims of reading instruction. They rated word-attack skills and developing vocabulary higher and the development of critical thinking and expanding world views lower than their colleagues in other countries. In general, they tended to emphasize skill-oriented aims rather than interest-enhancing aims.

The evidence reviewed here suggests that teaching the skills of comprehension receives little attention in Irish schools, even in third class. As was found in other surveys, comprehension is tested very frequently but is taught only infrequently. Irish children tend to experience tests of comprehension of text and tests in workbooks relatively frequently. The assessment of literacy skills through teacher-made vocabulary tests or student records occurs less often. Evidence on the association between assessment and achievement is not very consistent, and is difficult to interpret.

Chapter 6. Homework, Independent Reading, and Access to Books

In this chapter, in examining the independent reading of Irish students (including homework), the focus is on a comparison with students in other countries and on the evidence linking independent reading to reading achievement. We will see that while Irish 9-year old pupils spend about the same amount of time at reading homework as 9 year olds in most other countries, they read relatively less frequently in areas that are not strictly tied into schoolwork. Since access to books has been shown in the IEA international study (among others) to be related both to reading achievement and frequency of independent reading, data on the availability of books in school and similar resources are presented with a view to indicating developments that might increase children's independent reading and reading performance.

SIGNIFICANCE OF HOMEWORK AND INDEPENDENT READING

Cooper (1989) summarizes the results of three types of research on the effects of homework on academic performance: comparisons of homework with no homework, comparisons of homework with in-class supervised study, and the relation between time spent on homework and academic-related outcomes. He concluded that all three types revealed positive effects of homework on school achievement. Furthermore, there was evidence that homework is most effective when relatively lower-order skills are targeted for practice and when the outcomes are measured by teacher-made (rather than standardized) tests. There was also evidence that homework may be more likely to enhance school performance in reading than in mathematics.

As well of being of value in itself, independent reading is related to reading achievement. Anderson, Wilson, and Fielding (1988) found that time spent reading books is the non-school activity that best predicts reading development from second to fifth grade. They also demonstrated that the amount of time spent in out-of-school reading is as strong a predictor of reading achievement as any index of how time is spent in school. This finding is not unexpected when one considers that most of the new word meanings that children learn from the age of eight onwards are acquired incidentally while reading (Nagy, Herman, & Anderson, 1985). Furthermore, frequent independent reading provides children with information on a broad array of topics. Such information, in turn,

contributes to the enhancement of comprehension skills (Pearson & Fielding, 1991)

Of the many factors shown to be associated with independent reading, availability of books, borrowing from libraries, and parental influence have received most attention. Morrow (1983), for example, has shown that a high level of reported enjoyment of reading is associated with general availability of reading material in the home. The same study reported that frequency of visits to libraries was also associated with level of interest in reading. Several studies have also shown an association between parents' reading to children and interest in children's reading and the amount of time that children spend in voluntary leisure reading (Guthrie & Greaney, 1991).

As well as factors that contribute to the likelihood of reading, considerable attention has been paid to activities that may displace time that might be spent on reading. A particular focus has been on time spent watching television. In general, the literature suggests that while there is not a strong negative relationship between time spent watching television and amount of independent reading, very heavy viewing may be associated with lower reading achievement scores (Greaney & Martin, 1990).

Cross-national Comparison on Homework and Independent Reading

Students in population A were asked a variety of questions relating to reading homework: how often they were given reading homework, how long they spent at it, how frequently they got help with it, and whether or not they were required to do written work as a result of such reading. The results for Ireland are shown in Table 6.1 and the international comparisons are shown in Table 6.2.

From Table 6.1 it can be seen that the majority of pupils reported that they got reading homework almost every day. In general, they tended to spend a moderate amount of time on such work: up to 15 minutes was the most common response. About half the pupils received help with their homework, either sometimes or nearly always. In contrast, just over 2% reported that they rarely or never received help with their homework. Finally, the vast majority of pupils indicated that they were assigned written work on the basis of their reading. Only 1.5% indicated that this happened 'rarely or never.'

TABLE 6.1

PERCENTAGES OF STUDENTS REPORTING VARYING FREQUENCES FOR RECEIVING READING HOMEWORK AND RELATED ACTIVITIES, IRELAND, POPULATION A

	Rarely or Never	1-2 Tmes a Week	3-4 Times a Week	Almost Everyday	
Frequency of reading homework	1.2	7.0	28.6	62.1	
	None	Up to 15 mins.	Up to 30 mins.	More than 30 mins.	
Time on reading homework	4.6	63.3	22.5	9.2	
	Rarely or Never	Hardly Ever	Sometimes	Most of the Time	
Help with reading homework	2.3	44.8	31.1	21.4	
	Rarely or Never	Hardly Ever	Sometimes	Most of the Time	Always
Written work about reading	1.5	5.5	22.1	35.0	35.2

Note. Table entries are percentages of respondents who have opted for a particular response Percentages may not add to 100 because of missing data.

The international comparisons in Table 6.2 relate to frequency of getting reading homework each week (number of times), average time spent on homework, and frequency of doing written work as a result of reading. It is quite clear that Irish 9-year olds receive reading homework much more frequently than children of similar age in most other countries. Only Cyprus has a higher mean level for frequency of homework, while only three other countries have the same mean score as Ireland. While frequency of homework is high in Ireland, the amount of time which pupils spend on it is about average when compared with time spent in other countries. This picture also emerged from the teachers' questionnaire (data from which are not presented here) and suggests that third class children in Ireland are expected to do homework consistently but for relatively short periods of time.

TABLE 6.2

FREQUENCIES OF STUDENTS REPORTING EXTENT OF READING HOMEWORK AND RELATED ACTIVITIES PER WEEK, BY COUNTRY, POPULATION A

	Frequency of Reading Homework	Time Spent on Reading Homework (hours)	Frequency of Written Work About Reading
Belgium (French)	2.0	.31	3.6
Canada (BC)	1.5	.33	3.1
Cyprus	4.4	.35	3.5
Denmark	3.3	.30	3.0
Finland	2.8	.27	3.6
France	2.6	.30	3.7
Germany/East	2.4	.22	2.9
Germany/West	2.2	.20	2.8
Greece	4.3	.39	3.3
Hong Kong	2.7	.37	3.2
Hungary	4.3	.38	3.7
Iceland	3.9	.25	2.9
Indonesia	2.9	.36	3.5
Ireland	4.3	.22	4.0
Italy	3.6	.34	3.4
Netherlands	1.0	.27	2.4
New Zealand	2.4	.34	3.1
Norway	3.9	.21	3.2
Portugal	4.3	.35	4.0
Singapore	4.0	.44	3.8
Slovenia	2.9	.28	3.4
Spain	2.3	.45	3.3
Sweden	1.9	.28	3.3
Switzerland	1.9	.22	2.6
Trinidad & Tobago	3.2	.39	3.4
USA	2.4	.27	3.4
Venezuela	3.7	.32	3.9
Overall mean	3.0	0.31	3.3

Independent Reading. Students were asked to indicate the number of books in their homes (on a 6-point scale from none to more than 200). The mean number, for each country is shown in Table 6.3. The number for Ireland (118) is roughly mid-way between countries in which students indicated they had a relatively small number of books (e.g., Portugal, Italy, and Greece) and countries in which students said that had a relatively large number. All the Scandinavian

countries show a high mean number of books in homes, as does the Netherlands. New Zealand also has a high mean, while the mean for France is almost identical to that for Ireland.

Data on the frequency with which children borrowed books from a library indicate that Irish pupils borrow books frequently compared to pupils in other countries (Table 6.3). The highest frequency for the borrowing of library books was reported by pupils in Denmark and Canada (BC). Irish pupils tend to borrow library books at a level of frequency that is similar to the Netherlands, Sweden, and France.

One possible value of having books in the home is that parents or some other person may read to a child. In the pupil questionnaire, pupils were asked if someone read to them at home rarely or never (scored 1), one or two times a week (2), three or four times a week (3), or nearly every day (4). In Ireland, someone in the home read to pupils, on average about once or twice a week (mean = 2.2). This figure is rather high when compared with some other countries. Pupils in Norway and Sweden have a low mean for this practice, as do children in the Netherlands. This may be perhaps, because, by the age of nine, children in many developed countries have gone beyond the age where it is thought appropriate to read to them. Furthermore, children in many developing countries have a high mean score for this practice.

The next variable in Table 6.3 refers to the frequency with which people at home ask pupils about what they have been reading. Scores on this variable have been transformed to reflect the actual number of times per week that parents (or others at home) made such an inquiry. The mean score for Ireland is again in the middle. The highest scoring countries are Portugal, Trinidad & Tobago, and Venezuela. On the other hand, Norway, Sweden, Denmark, and New Zealand have low means for this practice. As in the case of reading to pupils, it may be that inquiries about reading reflect a concern about learning to read that in developed countries may be more relevant to younger children.

Pupils were also asked about the number of hours they usually watch television or video outside school hours on a normal school day. There were seven options ('I do not watch TV or video' to 'more than five hours'). The mean for Irish children, as shown in Table 6.3, is 2.4 hours, a figure that is relatively high in international terms. In fact, children in only five countries (USA, Portugal, Spain, New Zealand, and Venezuela) have higher scores than this. The fact that pupils in some of these countries have a high mean level of reading achievement while pupils in other countries have a low mean level suggests that watching TV is not related to school learning in a simple and straightforward way.

TABLE 6..3

MEANS OF SELECTED VARIABLES RELATED TO INDEPENDENT READING, BY COUNTRY, POPULATION A

	Time Watch TV (hours daily)	Number of Books at Home	Frequency of Borrowing from Library	Frequency of Reading to Child	Frequency of Being Asked at Home about Reading
Belgium (French)	1.8	142	2.9	1.5	1.9
Canada (BC)	2.4	157	3.7	2.9	2.0
Cyprus	1.8	84	3.4	1.9	4.4
Denmark	2.2	156	3.7	1.8	2.6
Finland	2.4	135	3.2	1.6	1.6
France	1.5	116	3.4	1.9	2.0
Germany/East	2.0	102	2.1	2.3	1.6
Germany/West	1.6	103	2.7	2.3	1.7
Greece	1.6	77	2.5	2.2	4.6
Hong Kong	2.4	41	3.3	2.4	2.8
Hungary	2.1	128	2.9	1.4	3.0
Iceland	2.4	162	3.1	1.1	1.9
Indonesia	1.4	25	3.1	2.1	2.3
Ireland	2.4	118	3.4	2.2	2.5
Italy	2.0	86	2.2	2.9	3.0
Netherlands	2.2	160	3.4	1.3	1.4
New Zealand	2.6	146	3.6	2.5	1.9
Norway	1.5	157	3.2	1.9	2.1
Portugal	2.5	69	2.5	2.0	5.1
Singapore	2.1	97	3.5	2.6	2.2
Slovenia	2.0	119	3.8	3.0	3.2
Spain	2.6	115	2.5	1.2	2.5
Sweden	2.0	174	3.5	1.7	1.8
Switzerland	1.4	143	3.1	1.9	1.5
Trinidad & Tobago	2.3	119	2.4	3.7	3.5
USA	3.0	137	3.5	2.5	2.6
Venezuela	2.5	73	2.2	2.9	3.9
Overall mean	2.1	116	3.0	2.1	2.6

Note. Number of books at home: the actual number of books.
Frequency of borrowing from library: 1 = never; 2 = hardly ever; 3 = once a month; 4 = once a week; 5 = more than once a week.
Frequency of reading to child: 1 = never; 2 = one or two times a week; 3 = three or four times a week; 4 = nearly every day.
Frequency of being asked at home about reading: 1 = never; 2 = one or two times a week; 3 = three or four times a week; 4 = nearly every day.

Table 6.4 displays the frequency with which children indicate that they read various kinds of materials (books, comics, magazines, and newspapers). The most striking feature of the table is the low mean level of independent reading activity across all types of reading material by Irish children.

TABLE 6.4

MEAN SCORES FOR FREQUENCY OF VARIOUS KINDS OF INDEPENDENT READING

	Frequency Reading Books For Fun	Frequency Reading Comics	Frequency Reading Magazines	Frequency Reading Newspapers
Belgium (French)	2.91	2.46	1.26	.75
Canada (BC)	2.84	1.22	.73	.56
Cyprus	2.48	1.58	1.51	1.21
Denmark	2.69	2.50	1.21	1.25
Finland	2.66	3.93	1.05	2.27
France	2.91	1.84	1.07	.79
Germany/East	2.65	1.92	.96	.68
Germany/West	2.68	1.50	.53	.63
Greece	2.67	1.60	1.37	1.08
Hong Kong	1.72	1.13	.64	1.96
Hungary	3.10	1.42	.99	1.34
Iceland	3.06	1.79	.68	1.89
Indonesia	2.08	0.97	1.29	1.04
Ireland	2.60	1.29	.62	1.24
Italy	2.24	2.06	.64	.66
Netherlands	3.34	2.31	.83	.80
New Zealand	2.82	0.79	.65	1.24
Norway	3.01	3.73	.66	1.50
Portugal	3.57	2.34	1.40	.53
Singapore	2.45	1.03	.85	2.46
Slovenia	3.28	1.73	1.21	1.13
Spain	2.76	1.93	1.05	.51
Sweden	3.20	3.40	.66	1.92
Switzerland	3.12	1.95	1.11	.70
Trinidad & Tobago	2.15	1.26	.67	2.02
USA	2.64	.72	.82	.94
Venezuela	2.94	2.16	1.67	2.44
Overall mean	2.8	1.87	0.97	1.24

Note. Table entries are number of times a week that students indicated that they read the material in question. The coding scheme was as follows: almost never = 0; about once a month = 0.25; about once a week = 1; almost every day = 6.

The frequency of reading of comics is very similar to that for books, with only six countries scoring below Ireland, while for magazines only West Germany has a lower mean score than Ireland. The situation is somewhat better in the case of newspaper reading, for which Irish pupils are close to the average. However, taking the various kinds of reading together, Irish children tend to read relatively less frequently than children in most other countries, especially EC countries.

Evidence on the Association Between Homework, Independent Reading, and Achievement

Evidence on the association between homework and achievement was obtained by examining both teacher reports of giving homework and pupils' estimates of how long they spent on homework. There was evidence that in seven countries (including Canada, Denmark, and New Zealand) pupils in more effective schools spent relatively longer at reading homework (Postlethwaite & Ross, 1992). Frequency of teachers' giving homework was found to be associated with school effectiveness in five countries, though not in Ireland.

The Postlethwaite and Ross study also showed that voluntary reading by students was relatively more frequent in more effective schools. This was the case in 18 countries including Finland, France, New Zealand, and the United States, but not in Ireland. In fact, of all the factors that differentiated between more and less effective schools, voluntary reading by students was the second most powerful.

ACCESS TO BOOKS IN SCHOOL AND READING PERFORMANCE

The findings we have considered indicate that Irish 9-year-olds tend to spend relatively small amounts of time on independent reading. One of the key factors that has been shown to increase reading performance (as well as independent reading) is the availability of reading materials in school. We now consider some of the literature that has dealt with the importance of school-based reading resources. A comparison is made between Ireland and other countries on the availability of school library facilities and resources. The evidence from IEA studies on the effects of these resources is set out. Finally, implications of the findings are discussed.

The Importance of School Reading Resources

A number of studies have demonstrated the importance of the availability of books in schools on reading literacy scores. Fuller (1987) reviewed 24 analyses

of the availability and use of textbooks in developing countries and found significant effects on reading achievement in 16 of them. It should be acknowledged that this review relates specifically to developing countries, where very few textbooks may be available in schools. However, the evidence is based on quasi-experimental studies, not just survey data. For example, in an experiment in the Philippines, textbooks were provided to over 2000 pupils in 52 schools. When compared to a control group, the children with the textbooks (two per pupil) had made substantially greater gains in achievement during the school year. The performance of the experimental group surpassed that of the control group by .50 of a standard deviation in science, .31 of a standard deviation in mathematics, and .32 of a standard deviation in reading (Heyneman, Samison, & Montenegro, 1983).

The effects of school libraries as an educational resource have been examined in at least 18 studies and a positive significant effect on average pupil achievement was found in 15 of the studies (Fuller, 1987). Similar effects emerged in an earlier IEA reading study (Thorndike, 1973). The association with achievement remains, even when home background influences are taken into account.

Despite the shortcomings in its methodology, the recent report by Her Majesty's Inspectorate in Britain on the teaching and learning of reading is of considerable interest (Great Britain. Department of Education and Science, 1991). A number of factors associated with high standards of reading were identified in the report. These include co-ordination of the work in English as a whole and a clear well-documented policy on reading and practice that reflects school policy. Of great significance from the point of view of the present work was the finding that a wide variety of books was available to children in schools with high standards. Furthermore, the Inspectors found that the breadth of reading material in such schools was not left to chance and that variety was a key factor. Teachers in successful classrooms planned the selection of books so that children would encounter a good variety of fiction and poetry, read their own and other children's writing, and read newspapers, magazines, and advertisements. A limiting factor in the study is that the methodology is not especially clear; the findings seem to reflect the consensus of the HMI following their visits to schools but the basis for their conclusions is not evident from the report.

Cross-national Comparison of School Reading Resources

Table 6.5 shows the percentages of Irish schools in which principals indicated that a variety of resources for reading were available in their schools. It can be seen that while the majority of primary schools had a library, only a minority had a reading room. Furthermore, only a small number of schools reported that

they had a school newspaper or magazine. About one-quarter of schools reported having a teachers' professional library.

The information in Table 6.6 relates to a composite variable, 'reading resources.' The variable was calculated by adding the resources listed in Table 6.5 (school library, reading room, school newspaper or magazine, and teachers' library). From the table, it can be seen that the average level of resources in Irish primary schools (1.4 on the composite resources variable) is low by comparison with other countries in the survey. In fact, only four countries score lower than Ireland on this variable (East Germany, Portugal, Trinidad & Tobago, and Venezuela).

TABLE 6.5

PERCENTAGES OF SCHOOLS WITH READING RESOURCES, IRELAND, POPULATION A

	Yes	No
School Library	82.7	15.5
Reading Room for Pupils	8.9	90.1
School Newspaper or Magazine	13.8	85.6
Teachers' Library	28.3	70.8

Note. Table entries are row percentages. (Missing data account for the remaining percentage.)

International comparisons of specific resources (school library, etc.) (not shown here) indicate that Ireland is close to the mean with regard to the number of schools that have a library. In a significant number of countries, almost every school has a library, though there are quite a few countries in which up to half the schools do not have one. On the next item (student reading room), Ireland tends to be rather low in terms of provision. Similarly, the percentage of schools reporting that they have a school newspaper/magazine, tends to be higher in most other countries. This is also the case for schools having a teachers' library.

Also shown in Table 6.6 is the average number of books per student in school libraries in countries in the survey. While Ireland is in the lower half in terms of the average number of library books per student, some EC countries (including Greece, Portugal, Italy, and the Netherlands) are lower than Ireland. What is especially striking is the difference in scale between countries. Schools in New Zealand have five times as many books per student as have Irish schools, while Canadian schools have seven times as many. Denmark tops the list with ten times as many books per student as Ireland.

TABLE 6.6

MEAN NUMBER OF READING RESOURCES AND LIBRARY BOOKS IN SCHOOLS, BY COUNTRY, POPULATION A

	School Reading Resources	Library Books per Student
Belgium (French)	1.8	3.50
Canada (BC)	2.3	23.50
Cyprus	---	---
Denmark	3.4	33.14
Finland	2.5	7.79
France	1.8	5.33
Germany/East	1.2	1.21
Germany/West	1.8	2.90
Greece	1.7	1.88
Hong Kong	1.7	5.03
Hungary	2.7	13.60
Iceland	2.4	10.80
Indonesia	2.1	4.03
Ireland	1.4	3.35
Italy	2.1	2.55
Netherlands	3.4	2.86
New Zealand	2.1	17.78
Norway	2.5	16.90
Portugal	1.3	2.13
Singapore	3.3	6.84
Slovenia	3.2	13.34
Spain	2.6	4.40
Sweden	2.4	16.07
Switzerland	2.1	9.15
Trinidad & Tobago	1.1	1.00
USA	2.5	15.83
Venezuela	1.2	1.48
Overall mean	2.2	8.70

Note. First column of entries refers to the number (maximimum 4) of resources in the school. The second column indicates the number of books in school library per student.

Evidence from the IEA Studies on the Importance of Reading Resources

A comparison of the ten highest scoring countries with the ten lowest scoring countries shows that a large school library is one of the factors that consistently relates to high mean achievement levels in both Population A and Population B (Elley, 1992). Furthermore, the advantage of countries with large school libraries

holds both before and after controls for levels of social and economic development are applied.

It was also demonstrated for Population A that having a classroom library is of great value. A comparison of high and low scoring countries shows that the percentage of teachers who reported having a classroom library and the percentage who indicated that it contained 60 books or more are important factors differentiating between them. Furthermore, the finding does not reflect differences in affluence since the difference remains even after adjustment for social and economic conditions. A related finding is that the frequency with which students borrow books from school or public libraries is also much greater in high scoring countries.

Access to books in the community was also shown to be related to mean reading achievement at country level. Students in high scoring countries were reported by principals to have relatively greater access to public libraries and bookshops in the community than do students in low scoring countries. As might be expected, access is to some extent influenced by wealth and when this factor is taken into account, it diminishes somewhat in importance.

Level of resources for reading (in addition to books) were also found to relate to mean country achievement in Population B. School principals were asked to say whether their schools had a list of eight facilities which were regarded as facilitating reading. These included a student reading room, student newspaper, teacher library, literature club, and writing club. Such resources tend to be found more frequently in high scoring than in low scoring countries. The difference increases following adjustments for economic and social conditions.

In the within-country study of schools that are effective in reading, many of the variables we have just considered were shown to be related to achievement in several countries (Postlethwaite & Ross, 1992). For example, the composite variable 'reading resources available in school' is an important factor in differentiating more effective from less effective schools. The number of books in a library (per student) is associated with effective schools in 11 countries. Indeed, it is one of the most important factors differentiating effective from less effective schools in Ireland.

CONCLUSION

Irish 9-year olds frequently do reading homework for relatively short periods of time. When compared with their counterparts in other countries on independent reading, a less happy picture emerges. On the positive side, Irish pupils seem to have access to a reasonable number of books in their homes and

the habit of borrowing books from libraries is well established. On the other hand, in terms of frequency of reading, it seems that Irish children read rather less than children in other countries. This is true of all kinds of reading material, except newspapers. It may also be worth noting that Irish children tend to spend more time watching television than children in many other countries.

It is apparent that associations between access to books, time spent in competing activities, and time spent on independent reading are not straightforward. Nevertheless, the evidence from the present study is that voluntary reading generally tends to be associated with high reading achievement.

The amount of Irish 9-year olds' independent and leisure reading is well below the international average and is also well below what one would expect from their position in the international table of reading achievement. The amount of time children spend reading may be linked to the level of resources for reading that are available in schools, which is also low in Ireland by international standards. Given the evidence on the strong association between access to reading resources and reading achievement, improvement in such resources may be a worthwhile and promising approach to encouraging independent reading and standards of reading achievement.

Chapter 7. Conclusion and Future Directions

HOW ARE WE FARING COMPARED TO OTHER COUNTRIES?

The literacy performance of Irish students is just above the international average and slightly better than might be expected on the basis of the economic development of the country. There is some indication that the performance of pupils at 9 years of age (Population A) is relatively better than that of pupils at 14 years of age (Population B). There also would appear to be differences between pupils at the two age levels in the areas of literacy in which they are relatively strong and relatively weak. While pupils in Population A tend to do relatively poorly in Documents, this is the domain of strongest performance in Population B.

GENDER DIFFERENCES

In all the countries that participated in the study, girls do somewhat better than boys at both ages 9 and 14. There are, however, major differences between countries in the size of this gap and Irish girls, especially 14-year-olds, tend to do much better than boys. It is of interest that gender differences tend to be even stronger among poor readers; nearly three times as many Irish boys as girls would appear to have serious reading difficulties at age 14 years.

The precise reasons for the relatively large gender differences among Irish students are not clear. A body of evidence has now accumulated which demonstrates that in some countries, notably the United States, differences between boys and girls have virtually disappeared. There were suggestions in the present report that the small number of male teachers at primary-school level may contribute to the poorer performance of boys. However, this cannot be a complete explanation since several countries with a high percentage of female teachers, including the United States, have relatively small gender differences.

It has also been suggested that an early age of beginning formal reading may play a role in the poor performance of boys. The present study showed that the countries which began reading early tend to have greater gender differences. One possibility is that the language development of boys is behind that of girls so that their readiness for reading, when reading is introduced at an early age, is not sufficiently developed (Elley, 1992).

RANGE AND SCOPE OF LITERACY SKILLS

One important aspect of literacy performance is whether it involves higher-order or lower-order skills. Generally, activities that involve memory are placed at the lowest level, while comprehension, application, interpretation, and evaluation occur higher in the hierarchy. While it is difficult to make a general statement about the level of skills which an educational system fosters, there is evidence from the present study that in the Irish system a relatively high prominence is accorded lower-order skills.

There is considerable merit in giving appropriate emphasis to lower-order skills. However, there are also indications that greater emphasis on higher-order skills enhances achievement. This is especially so when opportunities are provided for activities that promote higher-order comprehension skills (especially meta-comprehension) which include asking pupils to describe their strategies for understanding and to compare stories and poems.

HOMEWORK, VOLUNTARY AND LEISURE READING

The findings of the IEA literacy study in relation to homework are very similar to those of an international study on mathematics (Lapointe et al., 1992). Both studies are in agreement in suggesting that Irish pupils are consistently assigned homework. However, to establish the significance of these findings it would be important to know more about exactly what children are asked to do by way of homework. In fact, we know very little about the role that homework plays in children's learning. As mentioned earlier, there is evidence that homework is generally found to relate positively to achievement: children who do more homework tend to do rather better in schoool. However, the relationship is not an especially strong one and it could be argued that a great deal depends on the nature of homework assignments.

It would be worth finding out whether homework is used by teachers to consolidate material that has been introduced in school. If so, the learning involved in homework would largely involve memory work (e.g., making sure that material has been learned to some criterion). Another possible function of homework is to explore some aspects of something that has been introduced in school. In this case, homework could promote higher-order learning, involving comparisons, application, and evaluation, and its significance would be quite different since it would emphasize enrichment rather than consolidation.

The results of the present survey show that Irish children are involved in leisure reading to a lesser extent than children in many other countries. At primary level, book reading is rather low, as is comic and magazine reading. The

difference between Ireland and the other EC countries in the survey is especially noteworthy.

The finding that Irish pupils spend relatively little time on independent reading may be especially important for a number of reasons. For one thing, the goal of encouraging children to read is central to the aims of the curriculum. Furthermore, there is considerable evidence that time spent reading is of considerable value in assisting the acquisition of reading fluency.

ACCESS TO BOOKS AND COMPETING ACTIVITIES

The most consistent finding from the IEA literacy survey is that access to books and reading resources is one of the most significant predictors of reading success. This finding emerged in the between-country comparisons where it was shown that high-scoring countries tend to have large school libraries, even when allowance is made for a country's level of economic development. It also emerged that the availability of reading resources in schools is one of the factors most strongly associated with effective schools within countries. In Ireland (as well as in ten other countries), more effective schools tend to have more books in libraries than less effective schools.

It is extremely difficult to quantify the reading resources to which students have access. The cross-national comparisons in the present study suggest that while Ireland is close to the international mean in terms of the number of schools that have libraries, other reading resources are rather scarce (e.g., number of books in libraries per student and school magazines).

Of all the competing activities that might prevent a child from reading widely, television viewing has received most attention. In the present study, Irish students were found to watch television relatively frequently, averaging just under two and a half hours viewing on a school day. In fact, there is a high level of television viewing among children in almost all Western countries including those in which children do exceptionally well in reading. Thus, it is not surprising to find that length of TV viewing does not correlate very highly with reading achievement. This was the case in both cross-country and within-country analyses. It may be that television viewing is a 'residual activity', one that is taken up when more focused activities have been completed.

TEACHERS' EDUCATION AND PROFESSIONAL DEVELOPMENT

It is of considerable concern that Irish teachers' attendance at inservice courses relating to literacy and professional reading is low by international standards. At primary level, Irish teachers report the lowest level of inservice

attendance of any country in the survey. Further, in only a small number of countries is teachers' professional reading below that of Irish teachers.

These failures in professional development cannot be taken as a criticism of individual teachers. However, they do indicate that the structures that should sustain teachers in their professional development are defective. Another important point is that teachers' access to appropriate journals and books is rather limited. As in the case of pupils' reading, access is a crucial issue.

In a great number of countries, there is a relationship between teachers' own reading and their style of teaching reading. Specifically, teachers who read relatively more tend to teach in a way that emphasizes the active, constructive nature of reading. In addition, teachers in relatively more effective schools tend to read rather more in professional areas than do teachers in less effective schools.

Recent research on the professional development of teachers suggests that in-career education is one of a number of factors that may enhance teachers' commitment. Equally important are workplace conditions including feedback, autonomy, participation, collaboration, and resources (Firestone & Pennell, 1993). The indications are that changes in such conditions are more effective in enhancing teachers' professional development than are differential salary incentives.

MANAGEMENT OF SCHOOLS

As well as effective leadership the evidence indicates that schools need enduring parental support and links with the community. In the study by Lundberg & Linnakylä (1993), degree of perceived parental support for schools was the factor that most strongly differentiated effective schools from those which were less effective. This finding underlines the importance of community support and involvement in the running of the school, a finding that has received considerable support in other research.

When asked about the importance of various activities in which they were involved, Irish principals, in common with their colleagues in most other countries, gave a high priority to the discussion of objectives with staff as well as to administrative work. In general, there was a tendency for principals in more effective schools to indicate that they gave a high priority to discussing educational objectives. There also was a tendency for schools in which principals gave a high rating to the evaluation of staff and contacts with the community to be more effective than schools in which principals gave a relatively low rating to such activities.

CLASS SIZE

The evidence from the present study testifies to the difficulty of demonstrating effects of class size on pupils' achievement. This may be due to a number of factors. One possible explanation is that other factors operate in ways that not only counteract the effect of class size but result in pupils in larger classes doing relatively better. There seems to be a practice of placing lower achieving children in smaller classes, which produces the apparently paradoxical outcome of children in larger classes doing relatively better than children in smaller classes.

While this explanation may be an important part of the picture, the evidence taken as a whole on class size does not unequivocally support the importance for pupil achievement that is sometimes attributed to it. Furthermore, it seems that very substantial reductions in class size are required to effect a significant difference in pupil achievement. Even when class size is reduced, there is a need for teachers' management of classes to change in ways that will take advantage of the reduction in numbers.

TESTING AND ASSESSMENT

In general, it would seem that Irish children are tested frequently for comprehension of text and are also given regular workbook tests. However, they are seldom assigned teacher-made tests or tests of reading study skills. This finding is consistent with the findings regarding levels of aims discussed above which indicate a relatively strong emphasis on lower-order skills in Irish schools.

IMPLICATIONS FOR FURTHER RESEARCH

The most consistent finding in the present survey relates to the association between access to books and children's reading achievement. Whether considered in terms of comparisons between countries or between schools within countries, the effects are strong and significant. It is also worth noting that the pattern is similar for both 9- and 14-year olds. Size of library, number of books, and access to other resources related to reading are all associated with reading achievement.

Although an association does not of itself establish a causal connection, there would appear to be sufficient substance in the findings to support the establishment of a pilot experimental programme with enhanced access to books for a selected sample of schools and with an appropriate evaluation of the

outcomes. Such an evaluation could provide clearer direction for policy development than is available at present.

It was noted early on that there are relatively large gender differences among boys and girls in Ireland compared to many other countries. Further, there are substantially more reading problems among boys than among girls at both ages 9 and 14. Elley (1992) drew attention to the fact that there was a tendency for greater gender differences to occur in countries where formal reading was introduced at a young age. While Elley does not spell out the reasons for this association with reading failure among boys, it could be argued that the initial failure experience among boys tends to result in a deficit in motivation which persists into middle childhood and adolescence.

Whether or not these speculations have any basis, there are grounds for examining the rationale for the early beginning of formal reading that has become established practice in Irish primary schools. In the writers' experience there is agreement among the majority of teachers that formal reading is introduced too early. The expectations of parents and prevailing practice are often blamed. It should be relatively easy to initiate a pilot project to evaluate experimentally the effect of delaying the introduction of formal reading by perhaps a year.

Finally, there is need to examine the various efforts that have been made to prevent the development of reading problems and to ameliorate those that are identified. Until now, the main response has been to provide remedial teachers for as many schools as possible. Furthermore, the arrangements for the delivery of remedial services seem to be similar across most schools: almost all seem to operate on the basis of children being withdrawn from the regular classroom in order to avail of the remedial programme. The possibilities of other approaches to reading problems and/or of different methods of delivering the service merit systematic investigation.

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