

# **streaming, setting and grouping by ability**

**a review of the literature**

**Laura Sukhnandan  
with Barbara Lee**

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# 1. INTRODUCTION

## 1.1 The purpose of the review

In Britain, the way in which pupils have been grouped, as a method of organisation within schools, has changed considerably over time. After the Second World War, streaming became the dominant form of ability grouping in Britain. However, by the 1960s and 1970s, other types of ability grouping, such as setting, within-class grouping and mixed ability teaching, became increasingly popular at different levels of schooling and in different subjects.

Over the last decade, following the 1988 Education Reform Act (GB. Statutes, 1988) and the introduction of the National Curriculum and its assessments, there has been increased debate about the most effective way to group pupils in order to raise levels of achievement. In the past few years growing numbers of educationalists and policy makers have advocated a greater degree of grouping by ability as a way of effectively implementing the National Curriculum and thus improving standards.

There has been a wealth of research investigating the impact of different forms of ability grouping on pupil achievement since the 1920s and 30s. In addition, there have been a number of studies that have focused on the effect of different types of grouping on teachers' perspectives, attitudes and expectations and on pupils' experiences of schooling. This report provides a review of the research literature on streaming, setting, within-class grouping and mixed ability teaching in an attempt to assess the implications of different types of grouping both in general and more specifically in relation to the changing British context.

## 1.2 Definitions of key terms

The terms used to identify different types of ability grouping within the research in this field vary between the USA and Britain. In addition, certain terms are often used inconsistently. Table 1.1 provides an outline of the terms used in this report along with their definitions.

Throughout this review, British terms are generally used. However, due to variations in the research designs of studies and researchers' interchangeable use of some terms, it has sometimes been necessary to use the terms: homogeneous grouping, which refers to any type of grouping by ability (such as streaming, setting and within-class grouping); and heterogeneous grouping, which refers to all forms of mixed ability grouping.

**Table 1.1 Key terms and definitions**

<b>UK Term (USA equivalent)</b>	<b>Definition</b>
<b>Streaming (tracking)</b>	<p>The method of assigning pupils to classes on the basis of an overall assessment of their general ability. Pupils remain in their streamed class for the majority of subjects.</p> <p>(GB. DES. HMI, 1979)</p>
<b>Setting (regrouping)</b>	<p>The (re)grouping of pupils according to their ability in a particular subject. Setting can be imposed on a whole year group or on a particular band at a time.</p> <p>(GB. DES. HMI, 1979)</p>
<b>Banding (no equivalent)</b>	<p>The year group is divided into two, three or four bands differentiated by ability. Each band contains a number of classes, which may vary according to ability or size.</p> <p>(GB. DES. HMI, 1979)</p>
<b>Within-class grouping (no equivalent)</b>	<p>This approach involves dividing a class into small groups and instructing each group separately.</p> <p>(Sørensen and Hallinan, 1986)</p>
<b>Mixed ability teaching (heterogeneous grouping)</b>	<p>Teaching groups include pupils of widely ranging abilities. The spread of ability in such a group depends upon the ability range for which the school provides.</p> <p>(GB. DES. HMI, 1979)</p>

## **1.3 Methodology**

### **1.3.1 Sources of information**

This literature review is based on research obtained through searches of relevant keywords (see Appendix A) on the following CD-ROM databases: British Education Index and International ERIC. NFER's bibliographical database, ProCite, was also used. Additional material was obtained through following up relevant references within articles and books.

### **1.3.2 Criteria for selection**

Due to the wealth of research in this area and the review's emphasis on the current British context, it was necessary to set some parameters. It was therefore decided to conduct a broad search of research conducted before the 1980s, predominantly in Britain and the USA, and a more in-depth search of relevant British research from 1988 to the present day. Both quantitative and qualitative studies were included. While published studies, conference papers and opinion pieces were included in the study, it was decided to exclude student theses and dissertations, given the scope and timescale of the project. The report is based on all of the research reviewed.

The findings from studies investigating ability grouping have, in general, been inconclusive. The report has therefore attempted to increase the coherence of the main findings by focusing on three types of research: the most influential studies; studies that have used meta-analytical techniques; and previous reviews of research in this area. This work inevitably includes studies which vary in focus, research design as well as in their findings. Outlines of the research designs of the key studies, meta-analyses and reviews referred to in this report are provided in Appendix B.

In particular, the report focused on the effects of ability grouping in relation to the following key variables: primary and secondary approaches; different curriculum areas; teachers' perceptions, attitudes and approaches to teaching; and pupils' experiences of learning and schooling.

## **1.4 The aims of streaming, setting, within-class grouping and mixed ability grouping**

This literature review focuses on research that has investigated the four most significant forms of ability grouping in Britain: streaming, setting, within-class grouping and mixed ability grouping. This section provides an overview of these forms of ability grouping through a comparison of their main aims.

The rationale behind streaming relates to classic theories of intelligence testing which argue that individuals have a fixed, general level of intelligence that they acquire genetically and which can be objectively measured with the use of standardised tests. In order that children can be streamed, they are usually required to complete a series of tests. On the basis of such test results, and occasionally teachers' reports, children are then allocated to streams. Traditionally, this has meant three streams from the age of seven (Simon, 1993). The main aim behind the use of streaming is to reduce the heterogeneity of the learning group and thus the diversity of pupils' needs in the class. It facilitates whole-class teaching and allows teachers to match educational experiences to pupils' levels of academic ability (Rosenbaum, 1980).

Similarly, setting helps to increase the level of homogeneity within a class, thus facilitating the use of whole-class teaching. However, in addition, setting can be used to reduce the size of teaching groups through the division of classes into a greater number of sets thereby enabling pupil–teacher ratios to be lowered for particular teaching groups if not the school as a whole.

Setting differs from streaming in three distinct ways. To begin with, pupils are put into sets on the basis of their academic performance in a particular subject rather than through an assessment of their general level of intelligence. Secondly, setting offers a greater degree of flexibility than streaming as pupils can be allocated to different sets according to their level of ability in different subjects. Finally, setting reduces the negative psychological effects on pupils that are often associated with streaming because in a setting system pupils are not in the same groups all of the time (Slavin, 1987).

Within-class grouping represents yet another method for enabling teachers to provide different groups of pupils with methods of instruction and a curriculum that are tailored specifically to their needs (Lou *et al.*, 1996). This approach usually leads to the formation of groups that are homogeneous in terms of ability. However, in some instances, the main aim of within-class grouping can be simply to reduce the number of pupils that a teacher works with at any one time. In these cases, grouping can be based on other factors such as gender or friendship.

The advantages of within-class grouping by ability over other forms of ability grouping are: firstly, that in comparison to streaming and setting, within-class grouping by ability (in a mixed ability class) reduces the chances of pupils becoming labelled; and secondly, in comparison to mixed ability teaching, within-class grouping reduces the amount of individualised teaching that teachers are required to do in order to meet pupils' needs.

In comparison to streaming, setting and within-class grouping, mixed ability grouping represents a shift away from the belief that pupils' needs can be effectively catered for through different forms of homogeneous grouping, towards a recognition that pupils' needs can only be comprehensively addressed on an individual basis. Therefore the main aim of mixed ability teaching is to provide individual pupils with individualised teaching that is specifically tailored for their needs.

The main advantages of mixed ability grouping over other forms of grouping are that, in principle, it provides all pupils with equality of opportunity, in terms of curriculum, instruction and resources, and reduces the negative consequences often associated with homogeneous grouping. However, the effective implementation of individualised teaching makes considerably greater demands on teachers, in terms of planning, than teaching homogeneous groups.

## 1.5 The structure of the report

The report begins by outlining the trends in different types of pupil grouping prevalent in Britain prior to 1988 and the corresponding trends in the research on ability grouping (Chapter 2). This is followed by a presentation of the effects of different types of ability grouping in relation to the key themes identified from the literature. This includes the impact of ability grouping on:

- ◆ pupils' levels of achievement, in general, in relation to their level of ability, and in relation to different subject areas (Chapter 3);
- ◆ institutions, in terms of the implementation of grouping systems (Chapter 4);
- ◆ approaches to teaching, and teachers' attitudes and perceptions (Chapter 5);
- ◆ pupils, in terms of their attitudes, self-perceptions, friendship patterns, school involvement and social characteristics (Chapter 6).

Chapter 7 investigates the current trends in ability grouping in relation to the British context, following the Education Reform Act of 1988. The final chapter summarises the main findings of the review and highlights the implications for practitioners and policy makers (Chapter 8).

## **2. ABILITY GROUPING IN BRITAIN: An Overview of Trends Prior to 1988**

This chapter provides an overview of the historical developments of different forms of ability grouping prevalent in Britain prior to the Education Reform Act of 1988 (the post-1988 picture is presented in Section 7.2). The second half of this chapter outlines trends in the research on ability grouping.

### **2.1 Trends in the history of ability grouping in Britain**

This section outlines the origins of ability grouping and charts the way in which different forms have become more prevalent than others over time. It also describes the different approaches used in the primary and secondary sectors.

#### **2.1.1 The introduction of streaming**

The all-age schools of Victorian times catered for children aged 5–14 who were expected to progress by one ‘standard’ each year. Teachers were paid according to the number of children who passed their end of year examinations and moved up to the next standard. This provided teachers with a financial incentive to concentrate on the ‘average’ child in an attempt to get as many children through the tests as possible.

By the turn of the nineteenth century, there was a growing demand from industry for an increasingly skilled workforce. In response, more grammar schools were built and junior scholarships were introduced, providing free places for the most able pupils. This development, coupled with the demise of the ‘payment by results’ system, led teachers to shift the emphasis from getting as many ‘average ability’ children through the system to helping ‘high ability’ children to obtain a free grammar school place (Jackson, 1964; Davies, 1975).

Following a debate about the most appropriate way to organise classes, it was recommended that the all-age elementary schools should be divided into primary and secondary schools. The Primary School Report of 1930 (Hadow Report, 1930) suggested that where classes were large, grading according to ability within an age group should be introduced into junior schools. In addition, the report stressed the importance of maintaining easy transfer between groups.

*In very large primary schools there might, wherever possible, be a triple track system of organisation, viz.: a series of 'A' classes or groups for the bright children, and a series of smaller 'C' classes or groups to include retarded children, both series being parallel to the ordinary series of 'B' classes or groups for the average children... It is of course essential that any improvement or otherwise in the capacity of a pupil should be provided for by early and easy transfer between the different parallel classes.*

(Hadow Report, 1930, pp. 77-8)

However, during the 1930s, because the majority of junior schools were relatively small, the spread of streaming as a system of organisation was limited.

The Butler Education Act of 1944 (GB. Statutes, 1944) firmly established the recommended two stages of education, primary and secondary, and made a commitment to ensuring secondary education for all according to their age, aptitude and ability. It was felt that this could most efficiently be achieved by allocating children, on the basis of their primary school stream, into one of three types of schools — grammar, technical or secondary modern and, further, into particular streams within the school (Davies, 1975).

Due to the increase in the number and size of schools, and increased competition for grammar school places, streaming became the standard form of pupil organisation in (large) primary and secondary schools throughout the 1940–50s (Plowden Report, 1967; Barker Lunn, 1970; Davies, 1975; Galton, *et al.*, 1980). Recognising this development, Jackson (1964) stated that '*streaming appears to have spread with barely credible rapidity all over the country since 1945*' (p. 150).

In a survey of primary school organisation in 1962, Jackson (1964) found that roughly 12 per cent (1,980) of primary schools in England and Wales were large enough to implement streaming. He surveyed a third of these schools and found that 96 per cent of them used some form of streaming which was usually implemented when pupils were seven years old. In addition, he found that 85 per cent of those head teachers and class teachers who responded to his questionnaire were in favour of streaming. These findings are substantiated by Barker Lunn's (1970) survey, which was based on a random stratified sample of 2,000 junior schools in England and Wales. Barker Lunn found that 65 per cent of these schools were large enough to stream and, of these, 94 per cent chose to do so.

### **2.1.2 The move from streaming to non-streaming**

By the 1960s, the system of streaming had become increasingly unpopular. This was caused by two factors in particular: first, research which continued to produce inconclusive evidence regarding the benefits of streaming on pupils' levels of achievement and began to highlight the negative social consequences of streaming for distinct groups of pupils; and second, a shift in educational values away from a focus on excellence to concerns regarding



equality of educational opportunity. Davies (1975) suggests that

*[a] desire to create a society less divisive, less intolerant, more participatory and more democratic has informed the movement towards comprehensive education. This in turn has inevitably and logically brought non-streaming in its wake (p. 29).*

This shift in focus can be clearly seen in the findings of the Plowden Report (1967), which was a comprehensive review of primary education in England. When it was published in 1967, it appeared to reflect the main trends within primary education and represented a wide consensus regarding the ideal nature of primary education, (Simon, 1981). Interestingly, the report revealed that while the practice of streaming remained widespread within primary schools, teachers' support for streaming had decreased rapidly. The report found that only 34 per cent of teachers approved of streaming for all or most pupils in junior years. On the basis of these findings, it was suggested that teachers' views were possibly shifting away from support for streaming at a faster pace than it appeared from actual practice. The report therefore concluded:

*We welcome unstreaming in the infant or first school and hope that it will continue to spread through the age groups of the junior or middle schools (p. 291).*

Following the publication of this report, there was increased criticism of the system of streaming, a growing concern over the provision of equal opportunities and the abolition of the 11+, leading Galton *et al.* (1980) to state that the swing from streaming,

*which started very slowly in the mid 1950s, meeting strong opposition, suddenly took off with extraordinary rapidity in the mid to late 1960s, gaining influential support from the Plowden Report of 1967 (p. 39).*

This trend continued over the next 25 years. In the early to mid-1970s, surveys of primary school organisation found that, of those schools that were large enough to stream, only around a fifth of them chose to do so (Bealing, 1972; GB. DES. HMI, 1978a). By the 1990s, streaming had more or less disappeared as a form of primary school organisation, with fewer than three per cent of schools containing any streaming by ability (Lee and Croll, 1995).

### **2.1.3 Trends in other forms of grouping at the primary level**

Despite the popularity of streaming between the 1930s and 1960s, mixed ability grouping has been the dominant form of pupil organisation in *small* primary schools for decades. This was mainly because it was the only form of grouping that was practical given the restricted size of many schools (GB. DES. HMI, 1978a). However, following the publication of the Plowden Report (1967), which advocated mixed ability grouping within all primary schools, there was a rapid increase during the 1970s in the number

of schools introducing this form of pupil organisation. Consequently, since the 1970s, the vast majority of primary school pupils have been placed in such classes, although withdrawal groups are often arranged for the least able (Gregory, 1984, 1986). Lee and Croll's survey (1995) of primary pupil organisation in the 1990s, for example, found that 97 per cent of primary schools organised pupils in mixed ability classes.

Within mixed ability classes, some forms of ability grouping have been, and are, widely used. For example, schools have occasionally used setting in the higher years of some large primary schools, for reading and, less often, for mathematics (GB. Scottish Office. HMI, 1996). A survey in 1971 (Bealing, 1972), based on junior schools in two LEAs, revealed that although the majority of schools had mixed ability classes, two-thirds of teachers used within-class grouping by ability:

*There was widespread use of groupings based on similar abilities and attainments although the overwhelming majority of teachers were working with unstreamed classes (p. 235).*

In British primary schools, although within-class grouping has almost universally been used for at least some of the time (Harlen and Malcolm, 1997), it has usually been implemented on an ad hoc basis (Hallam and Toutounji, 1996; Boydell, 1981).

#### **2.1.4 Trends in other forms of grouping at the secondary level**

At the secondary level, mixed ability grouping has been a more recent phenomenon which spread, throughout the 1970s–1980s, alongside the introduction of comprehensive reorganisation (GB. DES. HMI, 1978b). In secondary schools, mixed ability grouping in all subjects was usually limited to the first two years (Years 7 and 8), with the exception of mathematics and modern languages, in which setting tended to be introduced earlier than in other subjects, especially in larger secondary schools (GB. DES. HMI, 1978b).

By the third year (Year 9), mixed ability grouping was usually phased out in favour of homogeneous ability grouping (e.g. setting). A survey (GB. DES. HMI, 1979) of ten per cent of maintained secondary schools in England, during 1975–78, revealed that only nine per cent of schools used mixed ability grouping for the *whole* curriculum in the third year. In comparison, 31 per cent of schools used mixed ability grouping for *some* part of the curriculum. The remaining 60 per cent used solely banding, streaming or setting.

Subjects which teachers perceive as suitable for mixed ability teaching tend to be those which do not have clear-cut criteria for correctness but which accept a range of differing responses. Consequently, arts subjects (as opposed to mathematics and modern languages) are commonly viewed as providing the most appropriate opportunities for mixed ability teaching (Reid *et al.*, 1981).

During this period, there was a notably greater degree of setting in the last two years of compulsory education in secondary schools (when pupils are working towards examinations). A study conducted between 1975–78 on a tenth of all maintained secondary schools in England (GB. DES. HMI, 1979) found that by the third year of secondary school, two-thirds of all schools adopted setting in *some* subjects. The remaining third of schools used banding, streaming or solely mixed ability teaching. The study also found that during the last two years of secondary school (Years 10 and 11 in current terminology), setting for mathematics was normal practice in 90 per cent of schools. However, the extent to which setting was implemented in other subjects varied considerably across schools.

Setting is usually used in ‘linear’ subjects such as mathematics, sciences and modern languages. This is generally because teachers believe that such subjects require pupils to work through a body of knowledge in a logical sequence and because the teacher, rather than worksheets/text books, is often perceived as the central resource. It is therefore considered more suitable, in these subjects, to have classes containing pupils of similar ability who can work at the same pace as one another (Hargreaves, 1987; Reid *et al.*, 1981).

With regard to within-class grouping, at the secondary level, there is little research regarding its effectiveness as it is very rarely used (Slavin, 1987; Harlen and Malcolm, 1997).

Having outlined the historical trends regarding the prevalence of different forms of ability grouping in Britain, we highlight in the following section the main trends in the research on ability grouping.

## 2.2 An overview of trends in research on ability grouping

It is possible to identify three dominant strands within the research on ability grouping which reflect the changes over time. The first strand includes experimental studies (Goldberg *et al.*, 1966; Borg, 1965; Svensson, 1962; Hartill, 1936). These focused almost exclusively on the impact of ability grouping on pupils’ levels of achievement through comparisons of homogeneous and heterogeneous forms of ability grouping. The studies began in the 1920s/30s and were conducted predominantly in the USA. The findings of these studies are inconclusive, with some stating that the effects of grouping are largely neutral on pupils’ levels of achievement and others identifying increases in levels of achievement for some groups of pupils.

This led to the second strand of studies (Rosenbaum, 1976; Finley, 1984; Hargreaves, 1967; Lacey, 1970; Ball, 1981; Abraham, 1989), which adopted ethnographic approaches to investigate the range of outcomes between pupils of different ability levels within streamed settings and their counterparts in

non-streamed environments. These studies were conducted predominantly in Britain during the 1960s–70s and highlighted the negative consequences of homogeneous grouping on low ability pupils' levels of achievement.

The third strand evolved out of the second strand, and represented an exploration of the treatment of pupils of different abilities within different grouping arrangements. On the whole, these studies indicate that, in comparison to pupils in high ability streams, those in low ability streams are provided with a lower quality of instruction and with teachers who are less experienced and less qualified.

Furthermore, research on the non-cognitive outcomes of ability grouping has found that placement in low ability groups reinforces differences relating to social class, gender and ethnicity. Working-class pupils, boys and pupils from ethnic minority backgrounds have consistently been found in disproportionately large numbers in the lowest ability groups (Oakes, 1982). The research has argued that this has substantial negative effects on pupils in terms of lowering their self-concepts, attitudes and inhibiting their adjustment to school (Oakes, 1982, 1985).

Overall these studies have produced few conclusive findings. Consequently, in recent years, some researchers have used a combination of qualitative and quantitative methods (Boaler, 1997a), meta-analyses (Kulik and Kulik, 1982; 1987) and reviews (Gamoran and Berends, 1987; Slavin, 1987, 1990a) in an attempt to address the limitations of previous research and gain a more comprehensive understanding of how different forms of ability grouping affect pupils' levels of achievement and experiences. However, these have also produced inconsistent findings. It has been argued that the lack of conclusive findings can be attributed to the limitations of research in this area, as discussed below.

### 2.2.1 Limitations of research findings

Both *methodological limitations* and *inherent difficulties* have been identified as contributing to the inconsistent findings of the research into ability grouping.

In relation to the methodological limitations of studies on streaming, a number of researchers (Passow, 1966; Gamoran and Mare, 1989; Slavin, 1990a; Hallam and Toutounji, 1996) have suggested that the lack of consensus can be attributed to the following explanations:

- the studies vary in scope, aim, purpose and length;
- the composition and size of samples are varied;
- the identification of a pupil's 'stream' is often based on ambiguous criteria such as pupils' self-reports;
- studies differ in the extent to which they are able to match their experimental and control groups;

- studies have tended to perceive all pupils within any given stream as 'the same', ignoring: firstly, that stream homogeneity is dependent upon factors such as the catchment area and class size; and secondly, that pupils of similar ability can find streaming beneficial to varying degrees;
- few studies take into consideration differences in teaching methods and instruction between experimental and control groups;
- many studies disregard the impact of the teacher, in terms of the effect of their attitudes, perceptions, level of motivation and experience, and how they allocate pupils to streams;
- studies rely on different test measurements, which make comparisons difficult;
- studies often focus either on achievement *or* social outcomes of streaming at the expense of the other;
- few studies take into consideration the local context.

With regard to the inherent difficulties associated with conducting research on ability grouping, many reviewers and researchers (Harlen and Malcolm, 1997; Cahan *et al.*, 1996; Hoffer, 1992; Gamoran and Mare, 1989; Gamoran and Berends, 1987; Kerckhoff, 1986) have noted that much of this work has failed to disentangle the effects of streaming from pre-existing differences. These differences include teaching methods, curriculum content, teacher and pupil expectations, resources, levels of ability and social characteristics all of which may significantly influence the academic development of pupils.

Even among those studies that do attempt to control for some pre-existing differences, such as prior achievement, it is argued that there are still inconsistencies in findings (Gamoran and Berends, 1987). It has been suggested that this is because it is not possible to control for all pre-existing differences such as the effects of the teacher, each of whom brings with them their own perceptions, attitudes, values and beliefs (Gregory, 1984).

Harlen and Malcolm (1997) suggest that it is not possible to separate the effects of grouping from the effects of the treatment because the main aim of streaming is to provide groups with different educational experiences in order to meet their needs more effectively. Cahan *et al.* (1996) support this view, as they state:

*Selection is inherent in the very notion of grouping, which entails differential treatment of students with different abilities, so that it is impossible to separate the treatment from the students (p. 30).*

## 2.3 Summary

This chapter has provided a brief overview of trends in the prevalence of different forms of ability grouping within Britain over the past century. It has also highlighted the main developments of the research on ability grouping and the limitations of the research.

- ◆ ***From the turn of the century***, streaming was recommended as an efficient way of organising pupils. After the Second World War, the number and size of schools increased, there was greater competition for grammar school places and the tripartite system of secondary education was introduced. These developments were accompanied by streaming, which became the dominant form of pupil organisation in large primary schools and secondary schools during the 1940s–1950s.
- ◆ ***During the 1960s***, the findings from research revealed that streaming did not have a significantly positive effect on pupil achievement but actually had negative social consequences. This evidence was coupled with a general shift in educational values away from the pursuit of excellence to an emphasis on equality of opportunity. As a result, throughout the 1970s–1980s, primary schools moved from streaming as the dominant form of pupil organisation towards mixed ability teaching, with the use of within-class-grouping and setting in particular subjects for the higher year groups. Secondary schools also moved away from streaming towards the adoption of mixed ability teaching for the lower years, and setting, predominantly for the examination years. Homogeneous forms of ability grouping were generally used for linear subjects such as mathematics, science and modern languages.
- ◆ ***Research on ability grouping*** can be divided into the following three main strands:
  1. experimental studies which focused on comparisons between the effects of homogeneous and heterogeneous forms of grouping on pupil achievement;
  2. qualitative studies which investigated the effects of different forms of ability grouping on the achievement of pupils of different ability levels; and
  3. studies which explored the relationship between different forms of ability grouping and pupils' experiences of schooling and social characteristics.
- ◆ ***Research limitations***: the only consistent finding regarding the effects of different forms of ability grouping on pupil achievement is that there are no consistent findings. Researchers have argued that this is because of the methodological limitations of many of the studies in this field. As well as the inherent difficulties associated with separating the effects of ability grouping from pre-existing differences (such as pupil ability and teachers' perceptions, attitudes and values), many other variables affect and are affected by the implementation of a system of ability grouping (such as teaching approaches and curriculum content).

### **3. ABILITY GROUPING AND PUPIL ACHIEVEMENT**

Since the 1930s, numerous experimental studies (such as Hartill, 1936; Borg, 1965; Goldberg *et al.*, 1966; Svensson, 1962) have been conducted into the relationship between systems of ability grouping and pupils' levels of achievement at both primary and secondary level. Studies initially investigated differences in pupils' levels of achievement, generally in terms of their mean scores, between those in homogeneous groups and those in heterogeneous groups. However, by the 1970s, researchers shifted their focus towards a comparative analysis of the effects of different systems of ability grouping on pupils of various abilities (high, middle and low).

These experimental studies produced a wide range of inconsistent and often contradictory findings. Consequently, in an attempt to try and clarify what the effect of different types of ability grouping was on pupil achievement, researchers' applied meta-analytic techniques and systematic reviews to the studies on ability grouping (Slavin, 1987, 1990a; Kulik and Kulik, 1982, 1984; Harlen and Malcolm, 1997). However, secondary analyses such as these have also adopted a variety of methodological approaches and have thus also reached different conclusions (Kulik and Kulik, 1987).

This chapter will use examples from studies, meta-analyses and research reviews to highlight the main findings of research into the overall effects of ability grouping on pupil achievement, before going on to investigate the effects of ability grouping on the achievement of pupils of different ability levels. The third section will present the effects of ability grouping on pupil achievement in different subjects. Finally, there will be a brief discussion of how the findings have been interpreted.

#### **3.1 The overall effects of different types of ability grouping on pupil achievement**

Research investigating the general effects of different types of ability grouping on pupils' levels of achievement has usually compared particular forms of homogeneous grouping (streaming, setting or within-class grouping) with heterogeneous grouping. Although the findings from such studies are inconclusive (see Section 2.2.1), this section will present the main trends from the research evidence. The overall thrust of the findings is that there are no significant differences between the effects of streaming and setting, compared with the effects of mixed ability grouping, on pupils' levels of achievement; and that the limited evidence on within-class

grouping suggests that it has a positive effect on pupil achievement compared with other forms of ability grouping. The research is discussed in more detail below.

### 3.1.1 Streaming and setting

A notable number of studies which have compared the effects of streaming and setting with heterogeneous grouping on pupil achievement have concluded that, overall, the form of grouping has no significant effect on pupil achievement at either the primary (Hartill, 1936; Borg, 1965; Barker Lunn, 1970) or the secondary level (Fogelman *et al.*, 1978; Svensson, 1962; Wallen and Vowles, 1960).

This is a finding which has been verified by meta-analyses and reviews of studies in this area. For example, when investigating the effects of streaming at the *elementary* level, both Slavin's (1987) 'best evidence synthesis' of 14 studies and Kulik and Kulik's (1984) meta-analysis of 31 studies concluded that streaming had no significant effect on pupil achievement at the elementary level.

Similarly, Slavin (1990a) also carried out a synthesis of all research published in English that evaluated the effects of ability grouping on achievement at *secondary school*. This provided Slavin with 29 studies on which to base his best evidence synthesis. He made no distinction between streaming and setting but nevertheless concluded that different forms of ability grouping had neither positive nor negative effects on levels of achievement. In addition, Slavin noted that this finding remained valid regardless of: the type of grouping, the number of ability groups employed, the subject areas to which grouping was applied, geographical location or date of study.

Predating Slavin's work, Kulik and Kulik (1982) conducted a meta-analysis on research into ability grouping at the secondary level. They analysed data from 52 objective studies and concluded that although 70 per cent found that students in streamed settings outperformed students in mixed ability settings by a small amount, differences were not significantly different.

There have been, however, a number of studies which have found that one form of grouping does have a more significant impact on pupil achievement than another. For example, Slavin (1987) reviewed seven studies which explored the impact of setting on *elementary* pupils' levels of achievement in either reading, mathematics or a combination of the two. Five of the seven studies concluded that pupils placed in sets learned more than those in mixed ability classes, while the remaining two studies concluded that pupils in mixed ability environments learned more than those in sets. Similarly, Boaler (1997a, 1997b) conducted a three-year study of pupils in mathematics classes at two *secondary* schools and found that the pupils in the mixed ability context obtained significantly more A–G GCSE grades than those in sets.



### 3.1.2 Within-class grouping

In contrast to the findings outlined above, studies (Slavin and Karweit, 1985), meta-analyses (Kulik and Kulik, 1987; Lou *et al.*, 1996) and research reviews (Slavin, 1987) which have investigated the effects of within-class grouping in relation to other forms of grouping (e.g. streaming, setting, mixed ability and individualised instruction) have generally concluded that within-class grouping has a greater positive effect on pupils' levels of achievement. It is important to note however that research evidence in this area is comparatively scarce.

In a more detailed investigation into the effectiveness of different *types* of within-class grouping, Lou *et al.* (1996) conducted a meta-analysis based on 12 studies that compared within-class grouping by *ability* (homogeneous grouping) with *heterogeneous* within-class grouping. The researchers found that the former had a slightly more positive effect than the latter on pupils' levels of achievement.

## 3.2 The overall effects of ability grouping on the achievement of pupils of different ability levels

Some studies have taken a more in-depth approach, by comparing the effects of homogeneous forms of ability grouping with heterogeneous grouping in relation to pupils of different ability levels. Although the findings of these studies are inconsistent, this section will present the two main trends from the research. The first of these shows that there is some evidence, from research studies, that the effect of streaming and setting, compared with heterogeneous grouping, on the achievement levels of high ability pupils ranges from neutral to positive, and, on the achievement levels of low ability pupils, ranges from neutral to negative. It is important, however, to recognise that the findings of meta-analyses fail to substantiate this claim. The second trend shows that within-class grouping, compared with other forms of ability grouping, appears to have a positive effect on achievement for pupils of all abilities.

### 3.2.1 Streaming and setting

A notable number of studies (Kerckhoff, 1986; Marascuilo and McSweeney, 1972; Newbold, 1977; Postlethwaite and Denton, 1978; Borg, 1965) which compared the effect of *streaming* with non-streaming on pupils of different levels of ability have concluded that while there is some evidence to suggest streaming increases (or has no effect on) levels of achievement for gifted pupils and pupils of high ability, it has a negative impact on the achievement of low ability pupils.

This argument has been substantiated by the findings of a review (Findley and Bryan, 1975) of ability grouping in the US between 1920–70, which concluded that although the effect of grouping on levels of achievement was inconclusive, most of the research reviewed indicated that, compared with non-grouping, streaming negatively affected the levels of achievement of pupils of average and low ability.

Similarly, a number of studies have concluded that gifted pupils (Kulik and Kulik, 1982, 1987) and high ability pupils (Askew and Wiliam, 1995; Frost, 1978) who are put into *sets* tend to achieve more than their counterparts in mixed ability classes; while average and low ability pupils within the setted environment tend to achieve either the same or less than their counterparts in the mixed ability context.

In contrast to these findings, however, Slavin (1987) noted that there was little evidence to support the claim that pupils of high ability benefit more from streaming or that pupils of low ability are negatively affected by streaming. Slavin argued that those studies which found such evidence may have included pupils who were on ‘gifted’ or ‘special’ programmes (courses with curricula specifically designed for pupils of a particular ability group). Such arrangements, he argues, are fundamentally different from ‘regular’ classes (in terms of curriculum, class size, resources, etc.) and have been shown in other studies to have significant effects on pupils’ levels of achievement. Kulik and Kulik’s (1982) meta-analysis also revealed that there were no significant differences between streamed and mixed ability settings in the learning outcomes of pupils of different ability levels (high, middle, low).

### 3.2.2 Within-class grouping

It has been suggested that lower ability pupils may not have the necessary skills to benefit from working in a grouped situation, which can lead to decreases in their levels of motivation and achievement (Harlen and Malcolm, 1997). However, much of the work on within-class grouping that has investigated its impact on pupils of different ability levels (high, average, low) has found that, compared with other grouping systems, within-class grouping has a positive effect on levels of achievement for pupils of *all* abilities (Slavin and Karweit, 1985; Slavin, 1987; Kulik and Kulik, 1987; Lou *et al.*, 1996). In particular, Lou *et al.*’s meta-analysis of 12 studies revealed that the difference between within-class grouping and non-grouping for pupils of different ability levels was most marked for low ability pupils, who achieved significantly more in the grouped setting.

Research has also revealed interesting variations between the effects of different *types* of within-class grouping and pupils of different ability levels. For example, Lou *et al.* (1996) found that while low ability pupils learned significantly more in heterogeneous groups, average ability pupils learned

more in homogenous groups. In contrast, group composition (homogeneous or heterogeneous) had little effect on the levels of achievement of high ability pupils. The authors suggest that this might occur because low ability pupils gain more from a heterogeneous environment in which they can be provided with assistance from their peers, while average ability pupils gain more through participating in the giving and receiving of explanations.

### **3.3 Ability grouping and pupil achievement in different subjects**

It is often assumed that the effectiveness of systems of ability grouping relates to the subjects in which they are used. However, in keeping with the general trend of inconsistency in the findings regarding the effects of ability grouping, research has failed to identify any conclusive benefits delivered by streaming or setting compared with heterogeneous grouping. For example, Slavin's (1987, 1990a) best evidence syntheses of studies in this area concluded that homogeneous grouping compared with non-grouping does not produce different patterns of achievement across subjects.

However, some studies (Slavin and Karweit, 1985; Slavin, 1987; Lou *et al.*, 1996) have uncovered some interesting differences regarding the impact of within-class grouping on pupils' levels of achievement in various subjects. It has been found, for example, that within-class grouping, compared with other forms of ability grouping, has a positive effect on pupils' achievement in mathematics at the (upper) elementary level (Slavin and Karweit, 1985; Slavin, 1987). Similarly, in a meta-analysis of 51 studies which investigated the effects of within-class grouping compared to non-grouping (at primary, secondary and post-secondary levels), Lou *et al.* (1996) concluded that within-class grouping appeared to have a significantly greater effect in mathematics and science than in reading, languages or other courses. However, due to the lack of research on within-class grouping at the lower primary level, it is difficult to ascertain whether this subject trend remains consistent at all levels (Slavin, 1987).

Furthermore, Lou *et al.* (1996) found no significant differences between homogenous within-class grouping and heterogeneous within-class grouping on pupil achievement in mathematics and science. However, they did find that pupils in homogeneous groups achieved more in reading than those in heterogeneous groups. Lou *et al.* (1996) have therefore suggested that variations in the effectiveness of within-class grouping for different subjects may be due to differences in the extent to which subjects have a marked developmental sequence (i.e. the more linear they are, the greater the impact of within-class grouping on pupil achievement).

### 3.4 Understanding the differences in findings

As the previous sections showed, research studies regarding streaming and setting can be identified with one of two conclusions:

1. grouping has no overall effect on pupils' levels of achievement; and
2. pupils in high ability streams or sets achieve more than those in mixed ability classes, whilst low ability pupils in streams or sets achieve less than those in mixed ability classes.

In an attempt to understand this difference in the research findings, Hoffer (1992) conducted a study that compared middle-school ability grouping and non-grouping on pupil achievement in mathematics and science. Substantiating previous findings, Hoffer's analysis revealed that grouping had no significant *overall* benefits in either science or mathematics. Hoffer found that this was because the higher levels of achievement gained by high ability pupils in the grouped setting (compared with their non-grouped counterparts) were offset by the lower levels of achievement by low ability pupils in the grouped setting (compared with their non-grouped counterparts). This argument was confirmed by Askew and Wiliam (1995), who also found that although, overall, setting improved the average achievement levels of pupils, '*in most cases, this was because gains made by higher attaining students more than offset losses for lower-attainers*' (p. 41).

Clearly one of the main reasons for the inconsistency in the findings of research on ability grouping relates to the inability of researchers to isolate the effects of grouping from the additional changes which grouping brings with it (e.g. variations in instruction, curriculum, teachers' attitudes). This led some reviewers (Wilson and Schmits, 1978; Rosenbaum, 1980) in this area to argue that discrepancies in the findings of studies can be attributed to variations in teaching methods and resources, different educational objectives and curriculum reorganisation. As a result, researchers began to move beyond simple investigations into the relationship between systems of ability grouping and levels of achievement to explorations of the mechanisms by which different systems of grouping may affect achievement. Such studies have focused on: institutional factors; factors related to teaching; and pupil effects — in terms of their orientation towards learning and the impact of their social characteristics. The findings of this research are discussed in the following three chapters (Chapters 4–6).

### 3.5 Summary

The findings from research on the effects of different types of ability grouping on pupil achievement are inconclusive. However, it is possible to identify some main trends from the research.

- ◆ ***In general***, the research findings indicate that streaming and setting compared with mixed ability teaching have no effect, either positive or negative, on average pupil achievement (across the ability range) at either the primary or secondary level. However, the limited research on within-class-grouping suggests that, compared with other forms of ability grouping, it has a positive effect on pupil achievement.
- ◆ ***In relation to pupils of different ability levels***, the findings from studies suggests that streaming and setting compared with mixed ability teaching have a neutral to positive effect on the achievement levels of high ability pupils and a neutral to negative effect on the achievement levels of low ability pupils. However, the evidence from meta-analyses on this issue reveals that streaming and setting compared with mixed ability teaching have no significant effects on pupil achievement, regardless of pupil ability level. In contrast, research on within-class grouping reveals that, compared with other forms of ability grouping, it has beneficial effects for pupils of all ability levels.
- ◆ ***In relation to different subjects areas***, the research evidence indicates that streaming and setting, compared with mixed ability teaching, have no significant effect on pupil achievement across different subject areas. However, research on within-class grouping suggests that, compared with other forms of ability grouping, it has a significant impact on pupil achievement in linear subjects (such as mathematics, science and modern languages).

The lack of conclusive evidence in this area has been attributed to variations in the way different forms of ability grouping are implemented in terms of organisation and teaching approach.

## 4. ABILITY GROUPING AND INSTITUTIONS

The primary aim of all forms of ability grouping is to provide pupils with instruction and a curriculum that addresses their needs effectively. Consequently, the main problem which researchers have had to contend with is how to assess the extent to which pupils' levels of achievement are influenced by the system of organisation *per se* or by particular institutional aspects affected by the implementation of a particular system (e.g. school characteristics).

Research investigating the relationship between different forms of ability grouping has tended to focus on: (a) the impact of ability grouping on the characteristics of schools; and (b) the extent to which schools have been able to implement different types of ability grouping efficiently.

### 4.1 Ability grouping and school characteristics

Studies (Barker Lunn, 1970; Jackson, 1964; Tibbenham *et al.*, 1978) which have compared the organisation of streamed schools with that of non-streamed schools have found that they differ not only in the way that they group pupils but also in their approaches to teaching and learning.

Schools which use streaming have been described as: having a more traditional, authoritarian outlook; often taking a more structured approach to teaching and learning; focusing on the acquisition of the three Rs; having staff who approved of the 11+ and streaming, and who preferred working with children in the top stream; and being more likely to have a full compulsory school uniform and use corporal punishment.

In comparison, non-streamed schools have been described as: emphasising self-expression, learning by discovery and practical experience; and having staff who are more tolerant of noise and talking in the classroom and who do not approve of the 11+ or streaming.

Distinct differences have also been found in pupil intake between school types (comprehensives, secondary moderns and grammar schools) and systems of ability grouping. Tibbenham *et al.* (1978) found that comprehensive schools which implemented setting were characterised by a relatively high proportion of pupils from non-manual backgrounds. However, where setting was used in grammar and secondary modern schools, there tended to be a higher intake of pupils from manual backgrounds. Tibbenham *et al.* were unable to draw any firm conclusions from these findings.

It has therefore been suggested that because the characteristics of schools which practise different forms of ability grouping are distinct, differences in pupil achievement between grouping systems may result from variations in the ethos of schools rather than system types.

## 4.2 Implementing different types of ability grouping

Research investigating the ways in which schools implement different forms of ability grouping has focused on two main issues: firstly, the extent to which supposedly homogeneous forms of grouping can actually achieve homogeneity; and secondly, the extent to which different types of groupings can be effectively implemented.

### 4.2.1 Achieving homogeneity

One of the main aims of homogeneous grouping (streaming, setting and within-class grouping) is to decrease the range of pupil ability within a class or group so that teachers can effectively and efficiently meet the needs of pupils of different ability. However, the extent to which any class or group is homogeneous depends on a range of factors, such as: the diversity of pupils within a school's catchment area; the basis by which students are allocated to classes/groups; and the extent to which pupils learn at a similar pace.

In addition to this range of factors, it is often argued (Esposito, 1973; Findley and Bryan, 1975) that homogeneity is difficult to achieve when implementing **streaming** because pupils' abilities in different subjects often vary quite significantly. Summarising the main disadvantages Esposito (1973) states,

*given that students differ with respect to patterns of ability across subject areas, and that reliable and valid estimates of a student's ability do not necessarily determine the conditions under which a particular student is likely to experience success in learning new capabilities, the implicit logic governing the implementation of homogeneous and heterogeneous patterns of organisation is suspect on both theoretical and practical grounds. (p. 174)*

**Setting**, as a system of organisation, overcomes this problem by allowing pupils to be (re)grouped according to their ability in a particular subject. However, it is important to recognise that, in practice, the extent to which setting can be effectively implemented is dependent on the constraints of timetables and the number of specialist staff within a school. It is therefore worth noting that by implementing setting in one subject, setting can quickly reverberate throughout the curriculum, creating 'residual setting' (Hargreaves, 1987). This means that pupils can find themselves being set in a range of subjects on the basis of their ability in one subject area or working in differently composed teaching groups for every subject — a

result which Hargreaves states is not appropriate for schools claiming to be comprehensive in character.

The extent to which **within-class grouping** produces homogeneity of pupil ability is affected by the general factors (listed at the beginning of this section) which impinge on all forms of homogeneous grouping. However, unlike streaming and setting, within-class grouping is also constrained by the need to ensure that the number of groups in the class is small enough to ensure that the teacher spends a suitable amount of time with each group. Therefore, although it has been shown that within-class grouping is most effective when it is used intensively with groups of three to four pupils (i.e. for more than one period a week) (Lou *et al.*, 1996), research suggests that, in practice, group size is often determined by the size of classes and rooms rather than by educational rationale (Harlen and Malcolm, 1997). These limitations inevitably result in the creation of a small number of groups that vary considerably in their degree of homogeneity. Thus the consequent effectiveness of within-class grouping can arguably be said to be completely out of the control of the teacher (Sørensen and Hallinan, 1986).

Researchers (for example, Rosenbaum, 1980) have also noted that it is important to recognise that grouping pupils homogeneously on the basis of one factor (for example, ability in mathematics) does not mean that the group will still be homogeneous in relation to another (for example, ability in English) and may actually confound other factors such as the attempt to achieve gender balance (Harlen and Malcolm, 1997).

In contrast, **mixed ability grouping** avoids the problems associated with trying to achieve homogeneity by attempting to match individual programmes to individual pupils' needs. In addition, it is administratively attractive because it allows classes to be timetabled independently of one another (GB. DES. HMI, 1978b; Reid *et al.*, 1981).

#### 4.2.2 Organisational constraints

Research into the organisational constraints of implementing different forms of ability grouping has tended to focus on the ways in which pupils are allocated to different classes/groups and the extent to which different systems offer mobility.

Only a minority of studies have investigated the way in which pupils are allocated to different streams, sets and groups. Such studies (for example, Jackson, 1964) reveal that a notable minority of schools use no objective or consistent measures when determining pupil placement, preferring instead to rely on non-ability criteria or teacher judgements.

In addition, a number of studies have shown that pupil allocation is often significantly related to social class (Ball, 1981; Barker Lunn, 1970; Jackson, 1964; Taylor, 1993; Boaler, 1997a, 1997b), season of birth (Barker Lunn, 1970; Jackson, 1964) and ethnicity (Esposito, 1973; CRE, 1993; Troyna, 1992, 1991).



One study (Troman, 1988) which investigated the decision-making process of middle school teachers' allocation of pupils to sets found that 80 per cent of pupils were placed without problems, on the basis of test results and teachers' knowledge of them. However, in 20 per cent of cases there was a disjunction between test results and teachers' knowledge of pupils. Consequently, it was found that teachers tended to rely on their perceptions of pupils, in terms of: their performance; the prior performance of their siblings; their previous sets; and their physical appearance, in order to place pupils in to sets. It seems unsurprising then, that Boaler's (1997a, 1997b) study of setting in secondary schools found that many pupils believed the set they were in did not fairly reflect their ability but, especially in the case of the boys, reflected their behaviour.

Subjective organisational practices are prevalent not only in the allocation of pupils but also in the degree of pupil mobility between streams, sets and groups. Although the opportunity for mobility is often stressed as an important and necessary feature of homogeneous grouping systems, those studies which have investigated the level of transfer between streams (Devine, 1993; Douglas, 1964) and sets (Taylor, 1993; Devine, 1993; CRE, 1993; Troyna, 1992, 1991) have generally found little evidence of mobility, regardless of end of year examination results and especially as pupils get older.

Barker Lunn (1970), for example, found that, over three years, roughly 75 per cent of junior pupils were known to be in the 'wrong' stream but were not transferred. This was often because different streams were taught different curricula and teachers were reluctant to cause disruption by moving children away from their friends (Jackson, 1964). Barker Lunn (1970) also revealed that when children did change streams, those who moved to a higher ability group tended to do better than before and those who moved to a lower ability group tended to do worse. She therefore concluded that pupils tend to conform to the standard of their stream.

Devine's (1993) study of primary school children's experiences and attitudes of setting for reading found that 77 per cent had never moved from their class. Similarly, Troyna's (1992) study of setting in a secondary school found that although setting in the fourth year was supposed to be primarily determined by pupils' third-year exam results, 84 per cent of pupils remained in the same set following their examinations, even though some of their results suggested that they should have been moved.

With regard to within-class grouping, which also aims to group pupils by ability so that teachers can meet pupils' needs more effectively, similar problems to those encountered when implementing streaming and setting (in terms of allocating pupils to groups and facilitating transfer between groups) will probably arise.

In contrast to homogeneous forms of grouping, mixed ability grouping avoids the problems associated with allocating pupils to, and transferring pupils between, homogeneous groups (GB. DES. HMI, 1978b; Reid *et al.*, 1981).

## 4.3 Summary

This chapter has highlighted the presence of distinct institutional characteristics between schools which adopt different forms of ability grouping and has outlined the multiple factors required to ensure that various homogeneous forms of ability grouping are implemented efficiently.

- ◆ ***Institutional characteristics*** — schools which use different forms of ability grouping are characterised by distinct educational values and approaches to teaching and learning.
- ◆ ***Achieving homogeneity*** — the extent to which different forms of ability grouping can reduce the heterogeneity within a class is dependent on the diversity of the school's catchment area and other factors. For each type of grouping, particular limitations apply:
  1. **Streaming** is constrained by the fact that pupils are grouped on the basis of their general ability regardless of variations in their level of ability across subjects.
  2. **Setting** is constrained by the limitations of timetabling and the number of specialist staff within the school.
  3. **Within-class grouping** is affected by the logistics of forming the most appropriate number of groups which allows the teacher to teach effectively given the size of the class and classroom.
- ◆ ***Pupil allocation*** — research investigating the ways in which pupils are allocated to different streams, sets and groups indicates that this process is often carried out on a subjective and inconsistent basis. Consequently, pupil allocation often reinforces divisions along lines of social class, gender, race and age (season of birth). In addition, research reveals that few schools have systems in place which allow pupils to move between streams, sets and groups.

Given these findings, researchers have argued that it is difficult to say with any degree of confidence whether the variations identified in research between streamed and non-streamed schools can be attributed solely to the way in which pupils are grouped.

## 5. ABILITY GROUPING AND TEACHING

Researchers (Gamoran, 1986; Slavin, 1987) have noted that although the effects of ability grouping have been the subject of much investigation since the 1930s, few studies have taken teaching-related factors into consideration when comparing homogeneous to heterogeneous forms of grouping, or when comparing variations between pupils of different ability levels. This seems surprising given the common-sense assumption that differences in teaching-related factors will impact significantly on learning outcomes regardless of grouping allocations. As Rosenbaum (1980) notes,

*one plausible explanation for the conflicting results of the ability grouping research is the failure to control for what teaching methods were used and whether teachers differentiated their methods for different groups. (p. 369)*

However, some researchers have attempted to bring a greater degree of coherence and understanding to the findings from research on ability grouping by investigating the impact of teaching in relation to grouping. Such research has tended to focus on the relationship between different forms of grouping and teaching methods (Rowan and Miracle, 1983; Barr and Dreeben, 1977; Oakes, 1982, 1985; Gamoran, 1986), teacher allocation (Jackson, 1964; Barker Lunn, 1970; Ball, 1981; Hargreaves, 1967; Lacey, 1970) and teacher attitudes and perceptions (Finley, 1984; Findley and Bryan, 1975).

### 5.1 The impact of homogeneous grouping on teaching factors

One of the primary reasons for implementing homogeneous grouping is to reduce the spread of ability within a class/group so as to allow for the differentiation of curriculum content and instruction, according to the ability of the pupils, and to facilitate whole-class teaching. This section will present the findings from research into the prevalence and effects of variations in curriculum programmes, instruction, and lesson pitch and pace in relation to homogeneous grouping, in an attempt to ascertain their level of importance.

#### 5.1.1 Curriculum programmes and pupil achievement

A number of studies (Oakes, 1982, 1985; Boaler, 1997a, 1997b) have revealed that homogeneously grouped pupils are provided with different types of curricula according to their believed level of ability. One study which highlights the often overlooked differences in the curriculum that is

provided for pupils in different **streams** is that of Oakes (1982, 1985). She found that such differences were significant. High ability students were provided with 'high-status' knowledge that provided them with access to higher education, and were encouraged to think independently and critically. In contrast, low ability students were exposed to a curriculum that focused on the acquisition of literacy and numeracy, and they were encouraged to follow directions and develop good work habits.

Investigating this further, a number of studies (Slavin, 1987; Kulik and Kulik, 1982, 1987; Askew and Wiliam, 1995) have highlighted the importance of the curriculum in relation to different forms of homogeneous grouping on pupil achievement. Slavin (1987) has provided evidence that **setting** can positively affect pupils' levels of achievement (regardless of ability level) as long as curriculum materials and the pace of instruction are adapted to the needs of each set. For example, a reading programme which is particularly popular in the USA (the Joplin Plan) sets pupils according to their ability, regardless of their age. Slavin (1987) reviewed ten studies that compared the effects of the Joplin Plan on pupils' levels of achievement in reading with pupils in mixed ability groups. Of the studies reviewed, eight found that the Plan had a positive effect on achievement levels for pupils of all abilities. The remaining two studies found no significant differences between type of grouping and achievement levels. Slavin notes, however, that the relative success of the Joplin Plan may be due to its novelty value.

Kulik and Kulik (1982, 1987) conducted two meta-analyses on the effects of different types of grouping on 'gifted' pupils. They found that gifted pupils achieved significantly more when grouped by ability compared with those who were not but *only* when they were provided with programmes that were designed specifically to meet their needs. Similarly, Feldhusen's (1989) synthesis of research on gifted children concluded that,

*the grouping of gifted and talented students in special classes with a differentiated curriculum ... leads to higher academic achievement and better academic attitudes for the gifted (p. 10).*

Substantiating these findings, Askew and Wiliam (1995) also investigated the effects of curriculum materials, in relation to high attainers, in their review of the effects of setting in primary and secondary schools. The authors found that setting, without any change to curriculum materials, had a small positive effect on levels of achievement. In contrast, when curriculum materials were modified, setting had a larger positive effect. However, when curriculum materials were specifically developed for high ability pupils, setting produced the greatest positive effect. Askew and Wiliam therefore concluded that,

*while some research supports the idea that gifted pupils and high attainers do benefit from some attainment grouping ... it is not clear whether the benefits are caused by the grouping or by the provision of differentiated learning materials (p. 41).*

Similarly, in an attempt to understand the mechanisms by which **within-class grouping** affects pupil achievement, Sørensen and Hallinan (1986) conducted a longitudinal study on the reading achievement of pupils in 48 elementary schools. They found that although pupils in within-class groups received less direct instruction, compared with those receiving whole-class teaching, they learned more of what was taught. Sørensen and Hallinan suggest that this occurred possibly because pupils pay more attention to what is taught when organised in small groups and/or because of the impact of modifying the instruction and curriculum to the ability level of the pupils.

Further investigation into the mechanisms by which within-class grouping influences pupil achievement has revealed: firstly, that the positive effects of within-class grouping remain, despite a wide range of abilities within groups/classes (Slavin and Karweit, 1985); and secondly, that the positive effects of within-class grouping notably increase when the system of grouping is accompanied by modifications to teaching methods and instructional materials (Lou *et al.*, 1996).

A number of researchers (Sørensen and Hallinan, 1986; Slavin, 1987) have therefore concluded that the relative success of within-class grouping does not necessarily derive from the reduction in group heterogeneity but can possibly be more accurately attributed to the decrease in the size of the instructional group and the more effective structuring of teachers' instructional time.

Since one of the aims of homogenous grouping is to provide pupils with different curricula in relation to their level of ability, and this is something which happens in practice, it is not possible to identify whether differences in pupil achievement result from their exposure to different curricula or from their experience of different systems of grouping. However, studies (such as Esposito, 1973) where researchers have ensured that the curriculum remains constant across different systems of ability grouping have found no consistent differences between different types of ability grouping and pupil achievement.

### **5.1.2 Instructional differences**

In addition to the differences in curriculum content, it has been suggested that variations in instruction between systems of grouping, as well as between pupils of different ability levels, may have a greater effect on pupils' levels of achievement than type of grouping. Gamoran and Berends (1987) argue that because instructional differences occur at the level of the classroom, and often do not simply reflect variations in curriculum, even those studies which take into consideration curriculum differences often fail to recognise the importance of variations in instruction. For example, Gamoran's (1986) study of first-grade reading found that type of instruction had a more positive effect on pupils' ability to learn words than the way in which they were grouped. Gamoran therefore concluded that:

*if we want to understand why some students learn more than others, in ability groups or in any other type of setting, we should examine the instruction they are provided (p. 195).*

Studies highlighting the need to appreciate the importance of variations in instruction, when attempting to understand the effects of **streaming**, have also been found at the secondary level (Oakes, 1982, 1985; Hacker *et al.*, 1991; Gamoran *et al.*, 1995). For example, Hacker *et al.* (1991) investigated the relationship between teacher instruction and ability groups within Year 9 science lessons in three secondary schools. They found no difference in the overall frequency of teacher interaction with pupils when teachers moved from high ability classes to low ability classes. However, they did observe noticeable changes in the 'type' of instruction which teachers gave. For example, within high ability classes there was an emphasis on acquiring concepts, learning principles, applying constructs to problem-solving activities and working independently. In contrast, interaction with low ability classes concentrated on the transmission of factual information through statements made by the teacher.

Variations in instructional practices between students in different streams were also found by Oakes (1982, 1985), who noted that, in comparison with low 'track' students, high 'track' students were exposed to instructional practices identified as effective (i.e. teacher enthusiasm and clarity). These practices motivated high 'track' students to learn and decreased the time in which they needed to do so. In addition, high 'track' students had better opportunities to learn as: their teachers devoted more time to learning as opposed to classroom management; the students were expected to spend a greater amount of time on their homework; they spent more time on-task; and they perceived learning as the dominant classroom activity.

Similarly, Boaler's (1997a, 1997b) study reveals that in comparison with low **set** classes, top set classes tend to be characterised by a fast pace, an air of urgency, competition between pupils and heightened teacher expectations (the consequences of this are dealt with in Chapter 6).

Not only is it important for studies to take instructional variations into consideration because of the possibility that instruction is significantly different between target and control groups, but also because of the possibility of unexpected similarities. For example, Gregory (1984) found that within streamed schools the most common teaching methods used were whole-class teaching and within-class grouping. In contrast, more than half of all teachers in non-streamed schools frequently used within-class grouping by ability. Gregory therefore concluded that studies (such as Barker Lunn, 1970) which compared streaming to non-streaming without taking into consideration the use of instructional methods may in fact simply have compared streaming *between* classes with streaming *within* classes.

### 5.1.3 The impact of whole-class teaching on lesson pitch and pace

It is often assumed that one of the advantages of homogeneous grouping is that the classes/groups contain a relatively narrow ability range which enables teachers to adopt a whole-class teaching approach. However, some critics (Boaler, 1997a, 1997b; Rowan and Miracle, 1983; Rosenbaum, 1976; Barr and Dreeben, 1977) have argued that this encourages teachers to overlook variations in individual pupils' ability levels and to pitch the lesson to an imaginary 'average' pupil who works at a certain pace in a certain way.

Barr and Dreeben's (1977) study reveals that teachers only tend to introduce new material when the 'average' child within the class has achieved mastery, which inevitably leads to differential pacing. This is because the 'average' pupil in a high ability class masters material more quickly than the 'average' pupil in a middle ability class and consequently pupils in the high ability class are paced at a faster rate. As a result, pupils in high streams experience a faster lesson pace than pupils in low streams.

There has also been much debate over the extent to which differential pacing affects pupils' levels of achievement. For the pupils in Boaler's study, top set girls found that working at the fixed pace of the set actually reduced their ability to understand mathematics, which negatively affected their levels of achievement. Boaler therefore concluded that one of the main purposes of setting (to facilitate whole-class teaching) can actually have a detrimental affect on pupils' levels of achievement.

*In a setted, class-taught, textbook lesson, the lesson structure ignores the individual needs of students which means that any individual who deviates from the prototype model student is disadvantaged.*  
(Boaler, 1997b, pp. 172-3)

However, Slavin (1990a) has argued that the pace of lessons is relatively unimportant because the faster the pace, the lower the level of mastery; while the slower the pace, the higher the mastery. In contrast, however, Ball (1981) states that the implication of teaching low ability students at a slower pace is that pupils may fall behind in some subjects. This, in turn, prevents them from ever changing streams or taking certain options, such as those which would provide them with the opportunity to enter higher education.

## 5.2 The impact of mixed ability grouping on teaching factors

One of the main aims behind the shift towards mixed ability teaching was to improve equality of opportunity, through the adoption of approaches to teaching and learning that tried to address the negative social consequences of homogeneous grouping. It was felt that this could be achieved by providing all pupils with equal access to a common curriculum; and promoting the matching of individual programmes to individual pupils' needs (GB. DES. HMI, 1978b; Reid *et al.*, 1981).

It is widely accepted that the teaching of mixed ability groups makes greater demands on teachers than more traditional forms of teaching (GB. DES. HMI, 1978b). This is because the success of mixed ability teaching depends predominantly on teachers' abilities to implement it successfully (Reid *et al.*, 1981). Teachers must therefore ensure that they cater for the full ability range within the group, through individualised teaching, which requires more sophisticated professional skills than teaching homogeneous classes (GB. Scottish Office. HMI, 1996; Gregory, 1986; GB. DES. HMI, 1978b).

Consequently, mixed ability teaching, especially at the secondary level, requires teachers to carry out a great deal of preparation and obtain a range of materials. They also need to develop assignments which match pupils' needs and which are motivating, and they need to provide pupils with regular feedback (GB. Scottish Office. HMI, 1996; Gregory, 1986).

When the Plowden Report (1967) first advocated mixed ability teaching at the primary level, it was recognised that '*the problem with the unstreamed class will be to translate into practice the principle of individual learning*' (Plowden Report, 1967, p. 292). It was therefore widely accepted that teaching and learning within a mixed ability class could only be effective if teachers addressed the range of pupil abilities. It was felt that this could be achieved by moving away from whole-class teaching methods towards individualised teaching (Gregory, 1986). Thus the role of the teacher shifted from that of instructor to that of 'consultant', and uniform, whole-class teaching was replaced with the introduction of programmes which catered for the needs of individual pupils (GB. DES. HMI, 1978b; Reid *et al.*, 1981). This allowed for the differentiation of pace and task for all pupils through the provision of a range of resources, 'extension' work for the more able, and individualised learning (GB. Scottish Office. HMI, 1996; Eilam and Finegold, 1992; GB. DES. HMI, 1978b).

Although the success of mixed ability teaching required teachers to be committed to individualised teaching, at the time of its introduction, very few teachers had received any training on how to implement these methods (Gregory, 1986; Plewes, 1979). In addition, the large amount of resources and materials which were required to realise the aims of individualised teaching were often not available (Gregory, 1984, 1986).



Consequently, although in some subjects (such as English) teachers were able to differentiate effectively through discussion, in other subjects there was little use of individualised teaching in mixed ability classes. In most schools, therefore, '*mixed ability groups did not receive mixed ability teaching*' (GB. DES. HMI, 1978b, p. 58). Instead, teachers frequently resorted to either whole-class teaching or worksheets for individual (although not necessarily individualised) learning, whereby pupils were set identical tasks to complete, with no provision for pupil ability (Bealing, 1972; GB. DES. HMI, 1978b; Reid *et al.*, 1981; Kerry 1982a, 1982b). Such programmes of work failed to provide effectively for differences in ability (GB. DES. HMI, 1978b).

The prevalence of this practice was highlighted in an investigation of teaching methods within mixed ability primary classrooms in the late 1970s. The ORACLE project found that teachers spent most of their time managing pupils' activities and responding to pupils' demands rather than teaching. The researchers therefore concluded that: '*given contemporary class sizes, the Plowden "progressive" ideology, based essentially on individualisation, is impractical*' (Galton *et al.*, 1980, p. 158).

It is also often noted that if 'proper' individualised teaching is present, there is no need to withdraw (low ability) pupils for additional support. However, the prevalence of withdrawal groups within schools that use mixed ability classes suggests that individualised teaching is not being adopted (Gregory, 1984, 1986).

The use of inappropriate, traditional methods for teaching mixed ability classes has resulted in a number of consequences. As noted above, the adoption of whole-class teaching methods with mixed ability classes meant that teachers failed to provide suitably differentiated programmes. Lessons, therefore, tended to be taught at a uniform pace and level which was usually pitched at pupils of average ability. As a result certain topics were occasionally omitted because they were deemed too difficult for pupils of average or below average ability (GB. DES. HMI, 1978b). In addition, assessments of mixed ability teaching have generally found that it has often failed to stretch the more able and has failed to respond to the needs of those who have fallen behind (GB. Parliament. House of Commons, 1997). A report by HMI (GB. DES. HMI, 1978b) noted that, in regard to most schools that they visited between 1970-77, they felt:

*concern about the level, pace and scope of the work in a significant number of subjects. This concern was sometimes on behalf of pupils of all abilities; more frequently it related to the extremes of the ability range; most frequently it related to the most able pupils (p. 57).*

Some research has gone further in arguing that many teachers in mixed ability classes were unable to ensure that the attention they gave to pupils, and the learning tasks selected, offered both low ability pupils and high ability pupils the opportunity for development (Reid *et al.*, 1981; Kerry,

1982b; Gregory, 1986). Thus pupil achievement became compressed towards the middle (GB. Scottish Office. HMI, 1996). This occurrence was something which was predicted at the time of its inception, as the Plowden Report noted (1967): '*if class teaching plays a large part, the abler child will be held back and the slower will lose heart*' (p. 292).

Consequently, mixed ability teaching became associated with the underachievement of pupils (GB. Scottish Office. HMI, 1996), especially at the two extremes (high ability and low ability pupils) (GB. DES. HMI, 1978b) and increased behavioural problems.

*Whole class teaching of lessons aimed at just below the middle ability level is the predominant method of teaching mixed ability classes in secondary schools. The most and least able are not catered for in the curriculum-content of the lessons, resulting in the former, and more so in the latter, becoming behaviour problems.*

(Gregory, 1984, p. 221)

In addition, it has been suggested that the underachievement of pupils in mixed ability classes has been compounded because mixed ability grouping requires teachers to assess pupils on an individual basis — something which teachers have been either reluctant to do because it is out of step with the values of equal opportunities or unable to do simply because of the pressures of time. As a result, it has been argued that teachers have failed to diagnose pupil underachievement and recognise individuals' needs (GB. DES. HMI, 1978b; GB. Scottish Office. HMI, 1996).

### 5.3 The allocation of teachers

A number of researchers (Jackson, 1964; Barker Lunn, 1970; Ball, 1981; Hargreaves, 1967; Lacey, 1970; Elton Report, 1989; Taylor, 1993; Boaler, 1997a, 1997b) have investigated the way in which teachers are allocated to different classes within schools which use homogeneous grouping. In general, they found that teachers are not allocated randomly to teach pupils of different ability levels. Instead, those teachers who have the greatest amount of experience and who are more highly qualified (i.e. heads of department) are more frequently allocated to teach pupils of high ability. This is despite the recommendations of government reports and research studies which have emphasised the need for teachers and resources to be allocated fairly to all pupils:

*It is not unknown for lower bands or sets to be given the least effective teachers and the worst rooms ... Schools should distribute their teaching and other resources equitably across the ability range.*

(Elton Report, 1989, p. 108)

In contrast, the use of mixed ability classes avoids the issue of allocating teachers and resources equally among all pupils (GB. DES. HMI, 1978b; Reid *et al.*, 1981).

## 5.4 Teachers' attitudes and perceptions

It has been suggested that pupils' levels of achievement can be affected by teachers' attitudes towards streaming, in general, and by teachers' attitudes towards different streams. Barker Lunn (1970) investigated whether teachers' attitudes towards streaming (i.e. if they were for or against it) affected pupils' levels of attainment. Her four-year analysis showed that teachers' attitudes had no significant effect, which she concluded was possibly because pupils changed their teachers every year.

Other research has shown that teachers whose training included work on mixed ability classes were more likely to perceive mixed ability teaching in a positive light. In addition, although long-service teachers appeared to be more supportive, in theory, of mixed ability teaching than newly qualified teachers (Clammer, 1985), they often found it more difficult, in practice, to adapt to mixed ability teaching (Reid *et al.*, 1981).

Regardless of the effect on achievement, it has been found that teachers prefer to teach pupils who are responsive, motivated and college-bound (i.e. high ability pupils) (Jackson, 1964; Barker Lunn, 1970; Finley, 1984; Rosenbaum, 1976). This is because they tend to view low ability pupils as presenting more problems in terms of discipline and therefore as more difficult to teach (Taylor, 1993). Furthermore, once teachers are assigned to teach high ability pupils, research suggests that they are far more conscientious in terms of the time and energy that they put into their teaching than when they teach low ability pupils (Rosenbaum, 1976; Finley, 1984).

Reflecting this preference of teachers to teach top ability pupils, Oakes (1982, 1985) claims that the relationship between teachers and pupils was noticeably more positive in high ability classes. Teachers of high ability classes appeared more concerned about their pupils and reported spending less time dealing with problems associated with behaviour and discipline.

In order for teachers to obtain their preferred choice of top stream classes, Finley (1984) claims that teachers compete with one another and in the process construct an occupational hierarchy, whereby the more 'able' teachers are allocated the more able students. In this way, Finley concludes, teachers themselves are streamed and, like their students, their position in the hierarchy exerts an influence on their sense of competence and career satisfaction:

*Teachers may be streamed, no less than pupils. The more established the teacher the more probable it is that he will get one of the better classrooms and a generous supply of books and equipment.*  
(Plowden Report, 1967, p. 290)

It has been argued that the tendency of teachers to view high streams more positively than low streams can lead to a vicious circle. Some studies (Harlen and Malcolm, 1997; Sørensen and Hallinan, 1986; Gamoran and Berends,

1987), for example, have found that teachers interact with high ability groups more frequently and more positively than they do with low ability groups, which can have negative consequences for low ability pupils in terms of lowering their levels of expectation, motivation and achievement, thus confirming and further reducing the expectations held by teachers.

## 5.5 Summary

This chapter reviewed research that investigated the relationship between different forms of ability grouping and teaching approaches.

- ◆ **Teaching approaches** — different forms of ability grouping require the adoption of different teaching methods, and the extent to which teachers are able and willing to adopt these approaches can determine the effectiveness of a particular form of ability grouping. Consequently, research indicates that — where teachers are able to modify the curriculum programme, their level of instruction and the pace and pitch of their lessons in relation to the requirements of the type of grouping being implemented — different types of ability grouping appear to have a positive effect on pupil achievement. However, in these cases, it is difficult to ascertain whether the increase in pupil achievement can be attributed to the type of grouping (such as the reduction in class heterogeneity), modifications to the teaching approach (such as the provision of a different curriculum) or a complex combination of the two.
- ◆ **Teacher allocation, attitudes and perceptions** — research also reveals that homogeneous forms of ability grouping can be associated with the prevalence of distinct patterns in terms of teacher allocation and teacher attitudes and perceptions. Teachers who are most experienced and more highly qualified are more likely to be allocated to teach pupils of high ability. In addition, teachers tend to have more positive attitudes, perceptions and expectations of high ability pupils compared to pupils of lower ability. This can increase high ability pupils' levels of motivation and achievement and thus reinforce teachers' positive opinions, leading to the creation of a vicious circle. Research suggests that this effect happens in reverse for low ability pupils.

## 6. ABILITY GROUPING AND PUPILS

Although the vast majority of experimental studies have ignored the impact of different systems of ability grouping on the development of pupils' attitudes and behaviour, this area has been the focus of much ethnographic work. From the late 1960s, qualitative researchers, in both the US (Rosenbaum, 1976; Finley, 1984) and the UK (Hargreaves, 1967; Lacey, 1970; Ball, 1981; Abraham, 1989), conducted studies which revealed that pupils' orientation towards school differed according to the system of grouping that they experienced. Such researchers suggested that homogeneous grouping polarises students into pro- and anti-school orientations, whereby high ability students accept school demands as the normative definition of behaviour while low ability students attempt to resist or subvert school rules.

Studies investigating the impact of ability grouping in relation to pupils have focused on variations in pupils' attitudes, levels of self-esteem, friendship patterns, level of school involvement and social characteristics.

### 6.1 Pupil attitudes

Research studies investigating the effect of ability grouping on pupils' attitudes have generally compared different types of homogeneous grouping with heterogeneous grouping.

Studies comparing **streaming** with non-streaming, at the primary level, have found that streaming has little effect on high ability pupils' attitudes towards schools. However, middle and low ability pupils who attend streamed schools hold more negative attitudes than their counterparts in non-streamed schools (Barker Lunn, 1970; Ferri, 1971). Similar research at the secondary level has been less conclusive. Kulik and Kulik (1982), for example, conducted a synthesis of eight comparative studies which focused on students' attitudes. They found that homogeneous grouping, compared with non-grouping, improved students' attitudes towards the subject for which they were grouped but there were no further conclusive findings.

In addition, a number of studies (Devine, 1993; Elton Report, 1989; Taylor, 1993; Boaler, 1997a, 1997b) have investigated the effects of **setting** on primary and secondary school pupils' attitudes. In keeping with the above findings these studies have also revealed that, in general, setting has a detrimental effect on the attitudes of low ability pupils.

There is, however, conflicting evidence: while some studies (Devine, 1993) indicate that high set pupils exhibit positive attitudes, others (Boaler, 1997a, 1997b) suggest that the attitudes of high set pupils are also negatively affected. Boaler (1997a, 1997b) conducted a three-year study comparing a matched cohort of students (as they moved from Year 9–11) in a school that used setting for mathematics with a cohort in a school that used mixed ability groupings. Boaler found that many top set students found their mathematics learning stressful because they had to work at a fixed pace. Consequently, some students felt that the pace was too fast, which inhibited their understanding, while others felt that the pace was too slow, which led to boredom. In addition, while some top set students found that the pressure, high expectations and competitiveness associated with their set was motivating, others (predominantly girls) stated that it led to greater anxiety and thus a decline in achievement levels.

It has been argued that homogeneous grouping need not disadvantage low set pupils if teachers plan carefully, using well-defined targets, and remain aware that grouping may reduce expectations and lower pupils' self-esteem (GB. Scottish Office. HMI, 1996). In addition, it has been suggested that one possible way of counteracting the extent to which homogeneous grouping leads to disaffection among low set pupils is for schools to shift their emphasis away from academic achievements towards a greater recognition of non-academic achievements, in an attempt to restore these students' sense of self-respect (Elton Report, 1989; Taylor, 1993).

In contrast to these findings highlighting the negative effects of homogeneous grouping on the attitudes of low ability pupils, Lou *et al.* (1996) have found that **within-class grouping** affects pupils' attitudes in a positive way. In their meta-analysis of 21 studies which compared the effects of within-class grouping and non-grouping on pupils' attitudes, Lou *et al.*, (1996) found that pupils in the within-class groups had more positive attitudes towards the subject.

With regard to **mixed ability grouping**, the limited research indicates that it avoids the labelling of pupils which occurs when pupils are streamed and setted and which is often associated with a decrease in teachers' expectations of low ability pupils and a decline in low ability pupils' levels of motivation, expectation and achievement (GB. DES. HMI, 1978b; Reid *et al.*, 1981). Some research has found that mixed ability grouping results in *all* pupils exhibiting a satisfactory attitude towards learning (GB. DES. HMI, 1978b). However, other studies reveal that mixed ability teaching can have a negative impact on high ability pupils' levels of motivation and achievement (Reid *et al.*, 1981).

## 6.2 Pupil self-perception

A number of studies (Gamoran, 1986; Marascuilo and McSweeney, 1972; Devine, 1993) have investigated the effects of ability grouping on pupils' self esteem. The findings from these studies are inconclusive and vary, to some degree, between the primary and secondary level. In broad terms, however, it was found that homogeneous class grouping appears to increase the self-esteem of high ability pupils and reduce the self-esteem of pupils of average and below average ability, compared with levels of self-esteem in non-streamed settings. However, within-class grouping compared with non-grouping appears to have a more positive effect on all pupils' self-esteem.

Gamoran (1986) investigated whether first-grade elementary pupils' levels of achievement were affected by their (and their teachers') perceptions of the symbolic value of different ability groups. He found few effects once initial abilities and instructional experiences were held constant, and therefore suggested that such factors only became of significance at higher levels of schooling.

However, in a study of primary school pupils, Devine (1993) found that pupils were evidently aware of the identity of each set in terms of variations in pupils' levels of ability, type of instruction (for example, teachers' questioning techniques) and access to resources. Furthermore, in comparison with low ability pupils in mixed ability classes, pupils in low sets experienced a greater amount of dissatisfaction with the work they were given and their learning materials. These pupils held more intensely negative perceptions of their set compared with the image held by high ability pupils of their own set.

This variation between pupils (of similar ability) who were either in sets or mixed ability groups was reflected again in their perceptions of their self-image. While the self-image of pupils of average and high ability remained similar regardless of type of grouping (sets or mixed ability), only three per cent of the pupils in the low ability set held a high self-image compared with 29 per cent of similar ability pupils in the mixed ability group.

Studies with older children would appear to confirm this effect. For example, Marascuilo and McSweeney (1972) compared the effects of streaming with non-streaming on the attitudes of different eighth-grade social studies classes at a junior high school. They found that low ability students in non-streamed classes held self-images which were closer to those of their high ability class peers than those of low ability students in streamed classes.

Summarising these findings, a number of reviews of research on ability grouping (Esposito, 1973; Findley and Bryan, 1975; Hallam and Toutounji, 1996) have concluded that pupils tend to be labelled, by teachers, peers and themselves, according to the ability group that they are in, and for some this becomes a self-fulfilling prophecy. Consequently, streaming inflated

the self-esteem of high ability students and reduced the self-esteem of students of average and below average ability, thereby further diminishing these students' levels of motivation.

However, it is important to note that the findings of some studies conflict with the above trends. For example, Essen *et al.*'s (1979) analysis of data from the National Child Development Study found only slight variations in students' self-ratings and levels of academic motivation across different types of grouping systems. Reflecting the contradictory nature of these findings, Kulik and Kulik's (1982) synthesis, of studies which investigated the effects of grouping on students' self-concepts, asserted that the findings were inconclusive.

Research suggests that, in comparison with non-grouped pupils, pupils in within-class group settings have, on average, higher self-concepts (Lou *et al.*, 1996). In addition, comparisons between low ability streams and low ability within-class groups (Slavin and Karweit, 1985) indicate that low ability groups are less often characterised by behavioural problems and low morale. This may be because pupils in low ability within-class groups are members of a class that has norms for appropriate behaviour, has a high morale and values learning (Slavin and Karweit, 1985).

### 6.3 Friendship patterns

An important part of the experience of schooling is friendship and it is widely accepted that pupils' peer groups can influence their orientation towards the learning process. A number of researchers have attempted to explore the ways in which ability grouping may affect and be affected by friendship patterns and peer contexts.

The main findings (Barker Lunn, 1970; Postlethwaite and Denton, 1978; Gamoran and Berends, 1987) indicate that, at both the primary and secondary level, although pupils who attend non-streamed schools have a greater opportunity to make friends of different abilities and social backgrounds than pupils who attend streamed schools, on the whole, they tend to choose friends of similar ability, social class and race.

It is often argued (Findley and Bryan, 1975; GB. DES. HMI, 1978b; Reid *et al.*, 1981; Eilam and Finegold, 1992; GB. Scottish Office. HMI, 1996) that one of the main disadvantages of homogeneous grouping is that it deprives low ability pupils of academic role models and peer support thus detrimentally affecting low ability pupils' levels of motivation, attitudes to work, achievement and behaviour. However, a number of studies (such as Peverett, 1994) have found little evidence to support this argument. Furthermore, Kulik and Kulik (1982) found that when pupils are grouped with peers of similar ability, they enjoy lessons more, and some students develop more positive attitudes about both themselves and their school.



In terms of peer relations Oakes (1982) found that in comparison with low 'track' students, students in high ability 'tracks' had interactions with others which were more positive and more likely to enhance their classroom experiences. For example, Oakes (1985) found that a greater number of low 'track' students felt that other students were unfriendly towards them, and more frequently reported experiencing angry and hostile peer interactions.

It is often argued that the main social advantage of mixed ability classes compared with homogeneous grouping is that it encourages more cooperative behaviour and more effective social integration (GB. DES. HMI, 1978b; Reid *et al.*, 1981). It is consequently often associated with the promotion of good relations, both amongst pupils, and between teachers and pupils (GB. DES. HMI, 1978b). There is, however, no conclusive evidence to show that mixed ability grouping enhances social interactions (Gregory, 1984).

### 6.4 School involvement

A number of studies have attempted to assess the impact of ability grouping on pupils' levels of school involvement. Such studies have focused on pupils' participation in school activities, disciplinary experiences, completion rates and career aspirations.

Overall, at the primary level, studies (Barker Lunn, 1970; Ferri, 1971) have found that in comparison with pupils in non-streamed schools, pupils in streamed schools participate less frequently in school activities. Barker Lunn concluded that, within streamed schools, children of low ability, low stream and low social class were unlikely to be included in school activities.

At the secondary level, Berends (1995) investigated the effects of streaming on students' pro/anti-school orientations. Berends found that students in the general/vocational tracks held lower expectations, experienced more disciplinary problems and were less engaged than students in the academic track. He also found that in the last two years of schooling these differences between the general/vocational track and academic track students became more marked.

In addition, a number of studies (Oakes, 1982; Findley and Bryan, 1975; Crespo and Michelena, 1981; Berends, 1995) have found that students in low ability groups, compared with those in high ability groups, are more likely to experience disciplinary problems, exhibit a greater degree of off-task behaviour and drop out of school. Findley and Bryan's (1975) review of research on ability grouping also concluded that low streams included a disproportionate number of children with behavioural problems, many of whom were not necessarily low achievers.

There are mixed findings regarding the effect of mixed ability teaching on disruptive behaviour (GB. DES. HMI, 1978b), with some researchers suggesting that because teachers spend most of their time working with individual pupils, the majority of the class are often inadequately supervised, which results in pupils becoming off-task (Gregory, 1986). Furthermore, teachers feel that pupils' learning needs cannot be met through mixed ability teaching in the middle and later years of schooling: hence the usual shift towards setting. However, research suggests that this is precisely when pupils are at their least socially cohesive and most disruptive (Reid *et al.*, 1981) and are thus more likely to benefit from the associated social benefits of mixed ability grouping.

In research with a different focus, studies (Barker Lunn, 1970; Ferri, 1971; Essen *et al.*, 1979; Postlethwaite and Denton, 1978) which have investigated the effect of streaming on pupils' career aspirations have found no significant differences between pupils of comparable ability in different types of grouping.

## 6.5 Social characteristics

Although few studies have considered the implications of homogeneous grouping in relation to pupils' social characteristics, those which do have revealed that streaming and setting reinforce and perpetuate the segregation of students in terms of social class (Douglas, 1964; Jackson, 1964; Plowden Report, 1967; Esposito, 1973; Oakes, 1982; Taylor, 1993; Boaler, 1997a, 1997b), gender (Boaler, 1997a, 1997b), race (Esposito, 1973; CRE, 1993; Troyna, 1992, 1991) and season of birth (Douglas, 1964; Jackson, 1964; Sutton, 1966).

For example, researchers have found that a disproportionately large number of children from working-class backgrounds are often located in the lower groups (Douglas, 1964; Jackson, 1964; Taylor, 1993; Boaler, 1997a, 1997b). Jackson (1964) found that,

*when analysed by social background, it was clear that streaming worked as a major form of social as well as academic selection. There were only five chances in 100 of a professional's or manager's child going into a 'D' class [low stream] (p. 29).*

Gender differences have also been demonstrated. Boaler (1997a, 1997b) found that the pace, pressure, competition and expectations associated with the top set appeared to disadvantage the girls in that set more than the boys. Consequently, girls who had been the highest mathematical attainers prior to setting became confused and unhappy. Boaler suggested that this was possibly because girls are known to prefer learning styles that are non-confrontational and non-competitive, have a greater awareness of the need

for understanding and become more anxious when they feel that they have not understood. Boaler goes on to argue that although this 'top set effect' may not relate to all subjects equally, it may account for the finding by Askew and Wiliam (1995) that the greatest disparity in levels of mathematical achievement between boys and girls currently occurs at the highest mathematical level.

Similarly, research focusing on race (Oakes, 1982; CRE, 1993; Troyna, 1992, 1991) and season of birth (Sutton, 1966) has found that homogeneous grouping discriminates against pupils from ethnic minority backgrounds and those born in the summer months, as these pupils tend to be allocated in disproportionately large numbers to low ability groups, regardless of prior ability:

It has therefore been suggested that the system of setting selects as much by class, gender and race as it does by ability:

*Although ability is supposedly the major criterion for placement in subject and examination levels, ability is an ambiguous concept and school conceptions of ability can be affected by perceptions that pupils are members of particular social or ethnic groups and by the behaviour of individual pupils. Factors related to class, gender, ethnicity and behaviour can be shown to affect the placement of pupils at option time, even those of similar ability.*

(Tomlinson, 1987, p. 106).

## 6.6 Summary

This chapter indicates that distinct relationships exist between different forms of ability grouping and pupils' attitudes, self-esteem, friendship patterns, level of school involvement and social characteristics which will inevitably affect pupils' schooling experiences and levels of achievement.

- ◆ ***Pupil attitudes and self-esteem*** — research suggests that streaming and setting, compared with mixed ability teaching, have a detrimental effect on the attitudes and self-esteem of average and low ability pupils. Research suggests that poor attitudes and low self-esteem can lead to a decrease in achievement which can create a vicious circle from which it is difficult for low ability pupils to escape. However, within-class-grouping, compared with other forms of ability grouping, appears to have a positive effect on the attitudes and self-esteem of all pupils regardless of their ability level.
- ◆ ***Friendship patterns*** — it has been suggested that homogeneous forms of grouping deprive low ability pupils of peer support and positive role models. In contrast, mixed ability grouping is often linked to the creation of more effective social integration. However, the findings from research in these areas remain inconclusive.

- ◆ ***School involvement*** — research suggests that homogeneous forms of grouping, compared with mixed ability grouping, result in low ability pupils participating less in school activities, exhibiting lower expectations, experiencing more disciplinary problems and having higher levels of absenteeism and non-completion.
- ◆ ***Social characteristics*** — the findings from the research in this area indicate that homogeneous forms of grouping reinforce the segregation of pupils in terms of social class, gender, race and age (season of birth). Consequently, low ability classes often contain a disproportionately large number of pupils from working -class backgrounds, boys, ethnic minorities and summer-born children.

## 7. ABILITY GROUPING IN THE CURRENT BRITISH CONTEXT

Having presented the trends regarding ability grouping in Britain prior to 1988 (Chapter 2) and the findings from research on the effects of ability grouping, we now outline the role of ability grouping in Britain from the late 1980s to the present day.

### 7.1 The reintroduction of ability grouping

Since the 1980s, there have been three notable developments which have shifted the emphasis of grouping away from mixed ability approaches and back to grouping by ability. These three developments have been: an increasing recognition of the limitations of mixed ability grouping within the British context; the implementation of the National Curriculum; and the introduction of a market-led education system.

This section will provide a brief overview of the role of each of these developments in the return of schools to grouping by ability, before going on to assess their implications.

#### 7.1.1. The limitations of mixed ability grouping

By the early 1980s, in Britain, mixed ability grouping was firmly established in the vast majority of primary schools and widely embedded in the early years (Y7–9) of many secondary schools (Wyatt, 1993). However, as highlighted previously (Section 5.2), during the 1980s, there was growing recognition that effective mixed ability teaching is difficult to implement given limited resources, training and large class sizes (Reid *et al.*, 1981; Galton *et al.*, 1980). Mixed ability classes were often thought to be failing to cater for the needs of pupils at the extreme ends of the ability range (high and low ability). Consequently, throughout the 1980s and early 1990s, criticism of mixed ability grouping grew (GB. Parliament. House of Commons, 1997) and it was often blamed for Britain's poor levels of educational achievement in comparison with its international counterparts. This inevitably led to a call by politicians for schools to return to 'traditional' methods of teaching.

For example, in a speech at a girls school in Oxfordshire, Tony Blair (then Leader of the Opposition) explicitly stated that there was a need to move away from mixed ability grouping in order to increase pupil achievement:

*the modernisation of the comprehensive principle requires that all pupils are encouraged to progress as far and as fast as*

*they are able. Grouping children by ability can be an important way of making that happen.* (Blair, quoted in Carvel, 1996, p. 7)

### 7.1.2 The impact of the National Curriculum

The second development which contributed to the restoration of grouping by ability was the introduction of a national curriculum, which was phased in from September 1989 and which schools were required to adopt. The subjects within the National Curriculum are based on 'programmes of study' which cover all years of compulsory schooling. Pupils are monitored and assessed in relation to 'attainment targets' (Croll and Moses, 1990).

The National Curriculum was based on the notion of 'stages' of learning which all pupils should go through. Goldstein and Noss (1990) argued that this approach was adopted for three main reasons: it is simple and easy to describe; it provides a convenient administrative framework; and it legitimates the segregation of children through the emphasis on attainment levels.

The National Curriculum's highly structured nature and its system of tiered entry for assessment (at key stages 2 and 3, and at GCSE) was perceived by many practitioners, especially at the secondary level, as incompatible with mixed ability grouping (Boaler, 1997a). This view was supported by the advice from a number of government bodies which substantiated practitioners' assumptions about the incompatibility of mixed ability teaching and the National Curriculum.

The National Curriculum Council, for example, following the implementation of the Education Reform Act (ERA) in 1988, produced a report (NCC, 1993) outlining the steps which they considered were needed, at the primary level, to ensure that the objectives of the ERA were achieved. They argued that different approaches to curriculum organisation and classroom management were needed. In particular, the NCC felt there should be greater use of setting pupils, as those schools which used this approach were *'better able to cover the requirements of the National Curriculum than those who remain committed to conventional assumptions about how the curriculum should be managed'* (p. 13).

The findings from the NCC report led to a number of government directives which advised schools to group pupils by ability at both the primary and secondary level. For example, the then Education Secretary, John Patten, announced that to improve standards in primary education, primary schools should consider: *'how to achieve a better match of work to children's needs — including the introduction of setting where possible, and of grouping by ability if setting is not possible'* (GB. DfE, 1993, p.1).

More recently, in the White Paper *Excellence in Schools* (GB. Parliament. House of Commons, 1997), it is noted that setting has proved to be effective in many secondary schools for mathematics, science and languages.

Although the Paper notes that no single model of grouping should be imposed on secondary schools, it does state that:

*Unless a school can demonstrate that it is getting better than expected results through a different approach, we do make the presumption that setting should be the norm in secondary schools. In some cases it is worth considering in primary schools.*

(GB. Parliament. House of Commons, 1997, p. 38)

In addition, one of the targets outlined in the White Paper states that 'by 2002 we will have schools setting pupils according to ability and further developments of innovative approaches to pupil grouping' (p. 44).

Therefore, although the National Curriculum was initially seen by some as a unique chance for pupils to be provided with a common educational experience and thus with equality of opportunity (Croll and Moses, 1990; Wyatt, 1993), critics have argued that it has had a negative impact on curriculum innovation, and that National Curriculum Assessment (NCA) has simply replaced the 11+ (Wyatt, 1993). Due to the increased emphasis on assessment, some have claimed that:

*The product became more important than the process in education and the streaming of children by ability at an increasingly early age the natural corollary.*

(Wyatt, 1993, p. 9)

### **7.1.3 The creation of a market-led education system**

The introduction of the National Curriculum was coupled with a change in educational values that shifted the emphasis from equal opportunities to discourses of 'academic success' (Boaler *et al.*, 1998). This was formalised in the 1988 Education Reform Act, which introduced market-based principles into the education system through the creation of the concept of parental choice of schools and the introduction of formula funding, which is based principally on the number of pupils within a school. Both of these approaches inevitably led to increased (and enforced) competition between schools (Yorke and Bakewell, 1991; Bagley *et al.*, 1996).

The rationale behind this shift was based on the belief that by bringing market principles to education, the increased competition would force schools to provide a quality of service acceptable to the market, thus raising standards and promoting economic viability (Yorke and Bakewell, 1991; Echols and Willms, 1995; Walford, 1996). In summary, policy makers hoped that increased competition would encourage schools to

*raise standards and become more 'consumer responsive' in order to compete for parental custom and to maintain or increase pupil numbers, with good schools growing and bad ones closing.*

(Bagley *et al.*, 1996, p. 126)

In contrast, critics of the shift towards a market-led education system argued that parental choice was simply a political device aimed at weakening local

authorities and effecting school closures and reduced public spending (for example, Gewirtz *et al.*, 1993).

The introduction of a market-led system has therefore meant that the economic viability of a school is dependent on the number of pupils that it can attract (Yorke and Bakewell, 1991). Combined with other initiatives (the demands of a National Curriculum which has differential testing at key stages 3 and 4; publication of league tables which show the percentage of pupils in each school who gained five or more A–C grades at GCSE (Wyatt, 1993); and falling numbers of secondary school pupils), this has meant that competition for pupils between schools is intense.

It is now widely accepted that the most effective way of maintaining or increasing pupil numbers is through improving and promoting school achievements. The higher, and more visible, a school's level of achievement, the more likely it is to attract a full capacity of pupils. This allows it to receive maximum funding, thus enabling it to provide an effective education and maintain its level of achievement (Yorke and Bakewell, 1991; Gewirtz *et al.*, 1995; Dixon, 1993). Consequently, given the constraints of funding and thus the lack of resources, schools have been pressured into maximising their results in the cheapest ways possible, such as through pupil organisation (for example, Gewirtz *et al.*, 1993).

Researchers have suggested that there are two cost-effective strategies which schools can adopt to maximise and exploit their examination performances. Firstly, schools can simply recruit more pupils who are likely to perform well in the league tables (i.e. middle-class and high ability pupils) and exclude those who are not (Ball *et al.*, 1994; Gewirtz *et al.*, 1993). Taking on board this notion, one of the main priorities of many schools has been to create and market institutional images that are popular with the parents of middle-class and high ability pupils (Bagley *et al.*, 1996).

In relation to the above point, and as the second cost-effective strategy, schools can implement ability grouping. Research suggests that there is a strong perception within schools that middle-class parents with 'able' children (i.e. those pupils who are likely to perform well in tests) are more likely to choose schools that implement ability grouping than those which do not (Gewirtz *et al.*, 1995). As Marshall (1998) points out,

*Setting is said to be favoured by parents — particularly those of more able children, whom schools are keen to attract (p. 6).*

In addition, the adoption of ability grouping is often perceived by practitioners as having a number of supplementary benefits. Firstly, because of the structured and differentiated nature of the National Curriculum's programmes of study and its assessments, teachers perceive that it can be taught more effectively to pupils who are grouped by ability than to pupils in mixed ability classes (as noted in the previous section). Secondly, there is a widely held assumption that ability grouping can ensure that the potential



of high ability pupils is realised through a focus on the needs of those who are most likely to achieve five A–C grades at GCSE (Marshall, 1998; Boaler, 1997a, 1997b). Summarising the current situation, Boaler (1997b) states:

*Schools are now having to spend time, money and energy creating images that will attract the 'right' sort of parents, parents whose children will gain high GCSE grades and secure their school's survival in the newly created marketplace (p. 165).*

Of course, the ability of a school to adopt these strategies is dependent on its position within the marketplace in the first place. Ball *et al.* (1994) argue that over subscribed schools are in a position to select the most 'attractive' pupils (i.e. pupils of high ability); this allows them to fill all available places and therefore to receive maximum funding, creating the best possible conditions for them to continue to do well. However, under-enrolled schools will have to recruit (partly by default) more pupils designated as 'less able' or more expensive (i.e. pupils with special educational needs), for which they will receive smaller budgets (Gewirtz *et al.*, 1993) — a process which inevitably leads to the creation of a vicious circle (Yorke and Bakewell, 1991).

It has therefore been argued that rather than raising overall standards, the introduction of a market-led education system is more likely to lead to greater divisiveness along lines of social class and race. This is because, given the evidence of previous research in this area (Hargreaves, 1967; Lacey, 1970; Ball, 1981), pupils from working-class and ethnic minority families are more likely to be concentrated in the most poorly resourced schools and in the lowest sets (Walford, 1996; Gewirtz *et al.*, 1993).

## 7.2 Ability grouping post-1988

As discussed above, it can be seen that these three recent developments (increased criticism of mixed ability classes, the introduction of a National Curriculum and the move to a market-led education system) have resulted in the 1990s witnessing something of a return to ability grouping, with setting, in particular, being established at both the primary (NCC, 1993) and secondary level (Boaler, 1997b). The extent of this shift is documented below.

In 1994 OFSTED reported that, at the primary level, beyond grouping by ability within a mixed ability class, there was little evidence of any widespread move towards traditional forms of grouping (streaming and setting). However, two years later, in the Annual Report for 1995–96 (OFSTED, 1997), it was noted that the National Curriculum Assessment was having a 'beneficial' influence on teaching as it had led to a clearer focus on what was to be taught and there was more precise targeting of groups of pupils, sometimes through teaching groups based on ability. By the following Annual Report (OFSTED, 1998b), it was noted that the organisation of pupils into sets was increasing, especially in mathematics and English for Years 5 and 6.

The role of ability grouping within secondary schools is more complex than at the primary level. As noted previously, most secondary schools use ability grouping for some subjects and year groups. However, using the findings from their inspections, the Annual Report for 1995–96 (OFSTED, 1997) identified the following three trends: firstly, that mixed ability teaching was effective in Year 7; secondly, standards and teaching were significantly better when pupils in Years 8–11 were organised into separate ability (rather than mixed ability) groups; and thirdly, that pupils in the upper and lower ability groups made better progress than middle ability groups and mixed ability groups. The Report adds an important caveat that organising pupils into groups does not necessarily guarantee a good match of work to pupils' abilities.

This shift towards grouping by ability has been verified in OFSTED's four-year review of secondary education from 1993–97 (OFSTED, 1998a). The report noted that *'the overall trend in grouping across the four years of the inspection cycle has been towards an increased amount of setting, and in large part this is associated with the pressure for higher standards'* (p. 84).

Schools have therefore adopted ability grouping policies regardless of their concerns over equality of opportunity and despite the research evidence which has highlighted the disadvantages of this type of grouping, in terms of equality of opportunity and social consequences (Boaler, 1997a; Gewirtz *et al.*, 1995). There appears to be an increasing acceptability among schools and society that the introduction of homogeneous grouping means that some pupils must be labelled 'low ability' regardless of the consequences (Boaler, 1997b; Dixon, 1993):

*These developments have meant that setting is now back in vogue and schools are returning to policies of differentiation and polarisation in alarming numbers.* (Boaler, 1997b, p. 165)

### 7.3 Implications of the return to grouping by ability

It is widely recognised (OFSTED, 1998b) that the benefit of setting is that it reduces the range of ability within a given group thereby enabling teachers to plan more effectively and adopt more appropriate teaching methods (i.e. increased whole-class teaching). However, there has been relatively little research or discussion by educational commentators highlighting its limitations.

In the light of historical and political trends, it would be expected that the number of teachers who held negative perceptions of, and attitudes towards, streaming would have increased over time. In 1967, the Plowden Report noted that roughly two-thirds of teachers held negative attitudes towards streaming, but it is interesting to see that research conducted since then has revealed that this number has more or less remained stable. For example, Wilson and Schmits (1978) found that over a 50-year period, from the 1920s

to 1970s, teachers' perceptions regarding the positive attributes of streaming remained constant despite the growing evidence which highlighted contradictory findings in this area. They found that two-thirds of the teachers sampled were unfamiliar with research regarding ability grouping, and of those who *were* familiar with the research, the majority nevertheless favoured streaming.

More recently, Lee and Croll's (1995) study of 409 primary schools in two LEAs found that 38 per cent of headteachers perceived streaming as having educational value. Despite these views, the majority of headteachers did not believe that they would receive strong support from parents, governors or LEA advisers to move towards streaming. Two-thirds of all the head teachers interviewed stated that regardless of their attitudes towards streaming, implementation would not be possible because of the small size of their schools.

In 1993, OFSTED conducted a survey of curriculum organisation and classroom practice at the primary level and found that even in those schools which used setting (usually for mathematics and English for the top two year groups in KS2) the match of work was poor in a third of the lessons, failing to take into account the range of abilities within each set (OFSTED, 1994).

A small number of commentators (Dixon, 1993; Goldstein and Noss, 1990; OFSTED, 1998b) have pointed out that the return to grouping by ability has brought with it the same limitations that have always been associated with it. The main disadvantages perceived in the current situation are listed below:

- setting ignores the fact that pupils' rates and styles of learning differ regardless of their level of ability;
- the progress made by top set pupils is offset by the lack of progress made by pupils in lower sets;
- the emphasis on performing well in the league tables has led to an increased focus on the acquisition of knowledge rather than on the importance of emotional and social development;
- setting reinforces the differences between pupils. In particular, it has been shown to discriminate against groups of pupils, such as boys, who are disproportionately over-represented in the lower sets (especially for English), which can reinforce negative stereotypes.

Researchers consequently state that it is important to recognise that '*grouping alone is not the solution to providing effectively for pupils at different levels of attainment*' (OFSTED, 1998b, p. 38). Thus the issue of effective pupil organisation is far more complex than is suggested by the typical polarised arguments that contrast 'traditional' formal approaches with 'progressive' informal approaches (Alexander, 1991).

For example, one of the main assumptions behind the implementation of setting is that it enables pupils of similar ability to have their needs met more effectively in terms of the type of instruction, curriculum and pace through the use of whole-class teaching. However, Boaler's work suggests that the ability of a student does not necessarily indicate the pace at, or the environment in, which they feel comfortable working. A student's success has relatively less to do with their ability and more to do with their personal preferences for learning pace and style. Similarly, Gjesme (1994) concluded that the extent to which pupils are able to benefit from homogeneous grouping is dependent on a complex combination of factors including their level of ability, gender and level of motivation.

## 7.4 Alternative forms of grouping

In addition to the four types of ability grouping outlined in this review, other approaches are used in schools, particularly in the USA. These alternative ways of grouping pupils include:

- Vertical grouping, where pupils progress to the next class on the basis of their ability rather than age. Thus high ability pupils can be accelerated and stretched while low ability pupils can be retained so that they can consolidate their learning more steadily (Bouri and Barker Lunn, 1969; Arrowsmith, 1989; Draisey, 1985).
- Cooperative learning, where pupils work in small mixed ability groups on a specific task. The approach emphasises the use of team goals and successes that can only be achieved if all members of the team learn the objectives being taught (Slavin, 1990b; Askew and Wiliam, 1995).
- Mastery learning, where pupils within a mixed ability class are tested at the end of a series of lessons and those who need additional help are provided with it while those who have mastered the task are provided with enrichment activities (Slavin, 1987).
- Continuous-progress mastery learning, whereby pupils are constantly regrouped according to the rate at which they proceed through the curriculum (Slavin, 1987).

The impact of these different types of ability grouping is difficult to ascertain as relatively little research has been conducted into their effectiveness. However, there is some evidence that cooperative learning has a beneficial effect on pupil achievement, regardless of ability level and gender, pupil relations with others and pupil self-esteem (Slavin, 1990b; Askew and Wiliam, 1995).

## 7.5 Summary

This chapter reveals that following the Education Reform Act of 1988 there have been three notable developments which have led to a shift, within British schools, away from mixed ability teaching towards increased grouping by ability. The impact of these three developments is described below:

- ◆ *the demise of mixed ability teaching* — throughout the 1980s, mixed ability teaching was blamed for pupil underachievement. Research suggests that its lack of effectiveness can be attributed to limited resources, lack of teacher training and large class sizes, as opposed to the approach itself.
- ◆ *the National Curriculum and its assessments* — since its introduction, there have been an increasing number of government directives which argue that because the National Curriculum is based on the notion of 'stages of learning', it can most efficiently and effectively be implemented if pupils are grouped according to their ability.
- ◆ *the creation of a market-led education system* — this has led to a shift in educational values away from issues of equality and back to the pursuit of excellence as schools are forced to compete with one another for pupils (upon which their funding and survival depends). As a result, schools are keen to attract pupils who are likely to do well in the assessments, and thus increase the school's position in the league tables and its chances of survival. Schools perceive that one of the most cost-effective strategies for achieving this goal is through the implementation of ability grouping.
- ◆ *Ability grouping in 1990s Britain* — the result of these three developments has been that throughout the 1990s there has been a notable increase in the number of primary and secondary schools returning to policies of ability grouping and implementing setting. This return to ability grouping has inevitably brought with it many of the limitations traditionally associated with it but a number of commentators have argued that setting can be effectively implemented if it is used with flexibility and selectivity. In addition, there have also been a number of calls for further investigation into alternative forms of ability grouping.

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## 8. CONCLUSION

The main aim of this report is to review the research on ability grouping in relation to the changing British context. The report focuses on the four types of ability grouping that have been most prevalent in Britain over the last 50 years: streaming, setting, within-class grouping and mixed ability teaching. In particular, the review investigates the historical trends in ability grouping within Britain and the relationship between different types of ability grouping and pupil achievement, institutions, teaching approaches, as well as teachers' and pupils' perceptions and experiences of schooling.

### 8.1 Main findings

#### 8.1.1 Ability grouping in Britain

The research literature reveals that within the British context, changes in educational philosophies and values have had a significant impact on the development and prevalence of different types of pupil organisation over the past century. Concerns with excellence, after the Second World War, led to the popularity of streaming. However, by the 1960s, as educational values shifted from a focus on excellence to an emphasis on equality of opportunity, there was a distinct move from streaming to mixed ability teaching, with selective use of setting and within-class grouping. Following the 1988 Education Reform Act, and the move towards a market-led education system, the focus of interest has shifted yet again. In recent years, there has been a move away from issues of equality back to concerns over standards, accompanied by demands for a return to traditional, homogeneous forms of grouping.

#### 8.1.2 Research findings on ability grouping

The findings from the research studies, meta-analyses and reviews which have investigated the effects of different forms of ability grouping have been inconclusive. This has been due, firstly, to the methodological limitations of much of the work on ability grouping; and secondly, to the inherent difficulties associated with attempting to disentangle the effects of ability grouping from both pre-existing differences and the wide range of variables which are inevitably affected when a particular form of ability grouping is implemented (see Section 2.2.1).

Nevertheless, it is possible to argue that, in general, the findings from the research literature suggest that there are no significant differences between streaming, setting and mixed ability teaching on pupil achievement. This applies at both the primary and secondary level, in relation to different subject areas, and regardless of a pupil's level of ability (high, middle or low).

In contrast, research that has explored the effects of within-class grouping, predominantly at the primary level, has found it to be beneficial to pupil achievement compared with other forms of ability grouping. However, due to the lack of work on this subject, these findings remain debatable.

In an attempt to understand the inconsistencies in the effects of different forms of ability grouping on pupil achievement, researchers have investigated the processes by which different types of ability grouping affect pupil outcomes. It has been found that the impact of different forms of grouping is notably influenced by: organisational factors, teaching approaches and the attributes and characteristics of both teachers and pupils.

**Organisational factors** — the literature suggests that the extent to which different forms of ability grouping can be effectively implemented depends on a range of factors such as the diversity of a school's catchment area, the criteria by which pupils are allocated to groups and the degree of mobility available.

**Teaching approaches** — the effective implementation of different forms of ability grouping usually requires the adoption of specific teaching approaches in terms of curriculum content, level of instruction and lesson pace. Consequently, the extent to which teachers modify their approaches to cater for particular types of grouping inevitably affects the impact of the type of grouping. However, researchers have noted that in those cases where modifications are made, it becomes difficult to assess whether changes in pupil achievement and experience derive *primarily* from the principles associated with the particular type of grouping (for example, increased pupil homogeneity) or from the modification of some element of the teaching approach (such as curriculum content).

**Teacher and pupil factors** — research has revealed that different forms of ability grouping impact on teachers' and pupils' attitudes, perceptions and behaviours thereby inevitably affecting pupil achievement and experience. In particular, research indicates that within homogeneous settings, teachers are predisposed to make negative judgements of low ability pupils which, in turn, negatively affects these pupils' self-perceptions, levels of achievement and experiences of schooling. Furthermore, research has highlighted the fact that homogeneous grouping reinforces the segregation of pupils along lines of social class, gender, race and age (season of birth).

### **8.1.3 A summary of the advantages and disadvantages of different forms of ability grouping**

Although the *overall* finding is that there are no significant differences between streaming, setting and mixed ability grouping on pupil achievement, it is possible to identify some benefits and limitations of the four main types of ability grouping (streaming, setting, within-class grouping and mixed ability teaching) at the level of the institution, teacher and pupil.

The tables below summarise the main findings from the review of the literature.

**Table 8.1 The advantages and disadvantages of streaming**

ADVANTAGES OF STREAMING	DISADVANTAGES OF STREAMING
<ul style="list-style-type: none"> <li>● Streaming is administratively attractive, because once pupils are allocated to a stream, timetabling can be arranged without reference to other classes.</li> <li>● Streaming reduces the heterogeneity of a class, which: firstly, allows teachers to adopt whole-class teaching methods thus reducing their need for planning; and secondly, enables teachers to tailor the curriculum, level of instruction and lesson pace to the ability of the class.</li> <li>● Pupils' individual needs are addressed, thereby enabling them to progress at their own rate with others of similar ability.</li> <li>● For high ability pupils, streaming ensures that their levels of interest and motivation are maintained.</li> <li>● For low ability pupils streaming allows them to receive the curriculum at a slower, more suitable, pace. In addition, because low ability streams are often smaller in size than other streams, these pupils have a better opportunity to receive small group/individual instruction. Furthermore, streaming ensures that these pupils are not overshadowed by their high ability counterparts.</li> </ul>	<ul style="list-style-type: none"> <li>● It is not possible to create <i>truly</i> homogeneous groups. Thus the use of streams may encourage teachers to ignore individual pupil differences.</li> <li>● Stream placements are based on tests and/or teacher judgements which are not value-free and which ignore the variation in pupils' abilities across subjects.</li> <li>● Mobility between streams is rare.</li> <li>● Grouping labels both pupils (in terms of the streams that they are in) and teachers (in terms of the streams that they teach) publicly. This can artificially inflate the self-esteem of high ability pupils and reduce that of pupils of low ability.</li> <li>● High ability groups benefit from better resources, a higher quality of instruction, and more experienced teachers.</li> <li>● Being placed in a low stream can have a negative impact on pupils' self-esteem, leading to a decrease in their levels of motivation and hence their achievement.</li> <li>● Low ability pupils are denied the support and stimulation of their more able counterparts and have fewer positive behavioural models.</li> <li>● Streaming discriminates against certain groups of pupils, who tend to be over represented in the low streams (e.g. boys).</li> </ul>



**Table 8.2 The advantages and disadvantages of setting**

<b>ADVANTAGES OF SETTING</b>	<b>DISADVANTAGES OF SETTING</b>
<ul style="list-style-type: none"> <li>● Setting allows effective targeting and matching of resources to pupils' needs.</li> <li>● It is a flexible system because it is based on subject-specific attainment and can be limited to particular curriculum subjects.</li> <li>● Teaching is easier when classes are homogeneous.</li> <li>● Pupils can have their needs more effectively met through the provision of an appropriately modified curriculum and by working at a suitable pace.</li> <li>● High ability pupils are less likely to feel frustrated by lack of challenge and more likely to be motivated by competition with peers of a similar ability. Low ability pupils are less likely to feel inferior or inhibited.</li> <li>● Setting reduces the compression of pupils' levels of achievement which can occur within mixed ability settings where teachers pitch lessons to the level of pupils of average ability at the expense of high and low ability pupils.</li> <li>● Because pupils are placed in different sets for different subjects, they are less likely to feel stigmatised, which may reduce some of the behavioural problems which are associated with low streams.</li> </ul>	<ul style="list-style-type: none"> <li>● If setting is not carefully implemented, its use in one subject area may force it to be imposed in another subject area.</li> <li>● Any system of allocating pupils to sets can be imprecise.</li> <li>● Setting may encourage individual pupil differences to be overlooked.</li> <li>● Pupils of similar ability are unlikely to learn at the same relative pace.</li> <li>● Once categorised, pupils tend to perform according to the set to which they are assigned.</li> <li>● The competitive ethos that often characterises top sets may have detrimental effects for some pupils (especially girls).</li> <li>● Pupils in the bottom sets lack positive role models and can develop negative attitudes and self-perceptions.</li> <li>● Teachers are often unfairly allocated to teach particular sets, with the more experienced and highly qualified often teaching the top sets.</li> <li>● Setting may perpetuate social distinctions.</li> </ul>

**Table 8.3** The advantages and disadvantages of within-class grouping

<b>ADVANTAGES OF WITHIN-CLASS GROUPING</b>	<b>DISADVANTAGES OF WITHIN-CLASS GROUPING</b>
<ul style="list-style-type: none"> <li>● Within-class grouping provides teachers with the opportunity to meet the needs of groups of pupils, of different abilities, through the modification of learning objectives and pace of instruction.</li> <li>● Within-class grouping encourages peer support within ability groups, which provides teachers with the time to concentrate on addressing the needs of pupils of all ability levels (high, average and low).</li> <li>● Within-class grouping increases teachers' abilities to obtain and retain pupils' attention, as the majority of teacher-pupil interaction takes place within small groups.</li> <li>● The emphasis on cooperative learning rather than competition may increase levels of motivation for all pupils.</li> <li>● Pupils have the opportunity to develop their social and communication skills, as they are encouraged to engage in oral work through explanations, debate and discussion.</li> </ul>	<ul style="list-style-type: none"> <li>● Organising pupils into ability-based groups does not ensure that pupils are grouped in the most appropriate way for learning purposes and may confound grouping practices in relation to other issues (e.g. gender balance).</li> <li>● Group size is often determined by classroom size and the furniture available rather than by educational rationale.</li> <li>● Teachers may overlook the individual differences between pupils within a homogeneous group.</li> <li>● Within-class grouping reduces the amount of direct instructional time that pupils receive.</li> <li>● Teachers prefer teaching, and hold higher expectations of, high ability pupils. This can have a negative effect on low ability pupils, decreasing their levels of motivation and consequently reducing their levels of achievement.</li> <li>● Low ability pupils are less likely to have the group skills and self-motivation required to benefit from a situation in which they are left unsupervised for the majority of the lesson.</li> <li>● Low ability pupils have fewer opportunities to learn with their more able counterparts.</li> </ul>

**Table 8.4 The advantages and disadvantages of mixed ability grouping**

<b>ADVANTAGES OF MIXED ABILITY GROUPING</b>	<b>DISADVANTAGES OF MIXED ABILITY GROUPING</b>
<ul style="list-style-type: none"> <li>● Mixed ability teaching improves equality of opportunity by providing all pupils with equal access to a common curriculum, teachers and resources.</li> <li>● It addresses the negative social consequences of homogeneous grouping by encouraging cooperative behaviour and more effective social integration.</li> <li>● It avoids the problems associated with allocating pupils to homogeneous groups.</li> <li>● Mixed ability teaching promotes the matching of individual programmes to individual pupils' needs and encourages teachers to assess pupils in relation to their own potential.</li> <li>● Mixed ability teaching allows for continuity in learning styles between primary and secondary schools.</li> <li>● Mixed ability classes promote good relations amongst pupils and between teachers and pupils.</li> <li>● Mixed ability classes reduce competition and the labelling of pupils, allowing pupils to learn at their own pace.</li> <li>● In mixed ability classes, low ability pupils may benefit from having high ability role models, especially in relation to their attitudes and behaviour.</li> </ul>	<ul style="list-style-type: none"> <li>● Mixed ability teaching makes greater demands than traditional forms of teaching because teachers need to ensure that they cater for the full ability range through individualised teaching.</li> <li>● Teachers have to complete a great deal of preparation, obtain a range of materials and develop assignments which match pupils' needs and are also motivating.</li> <li>● Teachers spend most of their time managing pupils' activities and responding to pupils' demands rather than teaching.</li> <li>● Teachers frequently resort to whole-class teaching or worksheets, which means that lessons tend to be taught at a uniform pace and at a level pitched at pupils of average ability.</li> <li>● Ineffective implementation can result in the failure to meet the needs of high and low ability pupils.</li> <li>● Mixed ability teaching can have a negative impact on high ability pupils' levels of motivation and achievement.</li> <li>● Because teachers spend most of the time working with individuals, the majority of the class is often poorly supervised.</li> </ul>

## 8.2 Implications of findings

Slavin (1990a) has argued that, overall, it is not possible to justify the use of homogeneous groups for two main reasons. Firstly, there is an absence of consistent evidence that homogeneous grouping, compared with mixed ability grouping, produces beneficial outcomes for pupils in terms of achievement and schooling experiences. Secondly, it is now widely accepted that homogeneous grouping has a negative impact on the achievement and schooling experiences of pupils of low ability and those who belong to particular social groups (for example, pupils from working-class and ethnic minority backgrounds, boys and summer-born children).

Given that this is the case, the findings suggest that schools need to take account of what is most appropriate for their staff, pupils, parents and community, in the context of their particular circumstances (such as class size, pupil ability range and resources) and developments at the national level, such as the requirements of the National Curriculum (Hallam and Toutounji, 1996; Edwards and Woodhead, 1996; Alexander *et al.*, 1992; Gregory, 1986).

Researchers suggest that implementing the most appropriate form of pupil organisation may be achieved through the selective and flexible adoption of different forms of ability grouping according to their fitness for purpose (Alexander *et al.*, 1992). As Edwards and Woodhead (1996) state in relation to mathematics teaching in primary schools,

*Groupings need to be flexibly applied according to fitness for purpose incorporating combinations of within-class, group and individual teaching (p. 7).*

In order to implement this flexible approach, teachers need to be provided with the skills to select and apply the form of ability grouping which is most appropriate for the task in question. Teachers should also be allocated to classes on a fair basis, and encouraged to review their strategies in relation to pupil progress and to maintain flexibility in their organisation of pupils (GB. Scottish Office. HMI, 1996). It is also important to recognise that over-complex patterns of pupil grouping can be problematic (for example, setting for every subject can limit class cohesiveness and thus pupils' sense of belonging). In addition, both parents and pupils should be kept informed about the rationale behind different forms of pupil grouping and the criteria for transfer between classes or groups.

Alternatively, attempts could be made to meet pupils' needs on a more individual basis. This could be achieved through greater modularisation of the curriculum, an increased emphasis on independent learning and improved library and information technology resources which would allow greater flexibility in the ways that pupils progress (Hallam and Toutounji, 1996).

### 8.3 Future research on ability grouping

It has been argued that there is a need for research on ability grouping to move away from simplistic comparisons of the effects of different forms of ability grouping on pupil achievement, towards research that merges experimental and descriptive approaches. This would allow the effects of different grouping arrangements, and the processes by which these effects are brought about, to be studied simultaneously (Slavin, 1987, 1990a).

In the last few years, some researchers have attempted to take up this challenge (Boaler, 1997a; Gjesme, 1994) by investigating the processes by which different forms of ability grouping actually impact on pupils' levels of achievement and schooling experiences. Such research has discovered that regardless of the particular methods of grouping, the impact on pupils, in terms of achievement and schooling experiences, is dependent on a complex interaction between type of grouping and each individual pupil.

For example, regardless of a pupil's level of ability, it has been suggested that while some pupils may find being grouped by ability stimulating and challenging, others may find it threatening and stressful. Similarly, while some pupils may prefer to be placed in mixed ability classes, others may find that this form of grouping fails to meet their needs, with a range of negative consequences.

It can therefore be argued that the goal of future research in this area must be to adopt a range of methodological approaches which will allow researchers to ascertain which forms of ability grouping have the most positive impact for different groups of pupils (in terms of their level of ability, level of motivation and social characteristics) within different learning contexts (such as different subject areas, class sizes and teachers' attitudes towards particular forms of grouping). Such work should also explore and highlight the ways in which the findings from such studies could be used to inform practice.

There is also a greater need for further development and detailed evaluations of alternative forms of ability grouping as outlined in Section 7.3 (Slavin, 1987, 1990a; Hallam and Toutounji, 1996).

In the current political climate, there is likely to be an increase in the prevalence of setting and perhaps even streaming, despite the lack of evidence for its effectiveness in raising levels of achievement and thus standards. Further research is needed to investigate the effects of grouping pupils by ability on the achievements of individuals and on the achievement levels across a school, in the context of recent government initiatives.

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# APPENDIX A

## Keywords and phrases used during the literature search

- Ability grouping
- Streaming
- Setting
- Within-class grouping
- Banding
- Mixed ability grouping
- Mixed ability teaching
- Grouping — classroom/class
- Whole-class teaching
- Classroom seating
- Classroom management
- Parental choice
- Educational markets — markets/marketisation

# APPENDIX B

## Abstracts of key studies and meta-analyses/reviews referred to in the report

### B.1 Key studies

REFERENCE	FOCUS OF RESEARCH	SAMPLE	FINDINGS
BALL, S.J. (1981)	To examine the processes of comprehensive schooling through an investigation of the impact of selective grouping on the careers of secondary school pupils.	A three-year case study of a single co-educational comprehensive school during 1973-76.	<p>The differentiation of pupils, which occurred as pupils moved through the school, led to the polarisation of pupils into pro- and anti-school sub-cultures which were linked to social class differentiation.</p> <p>This meant that the more academically successful the pupils the more likely they were to be in the top stream, adopt a pro-school sub-culture and come from a middle-class background.</p> <p>Pupils from different streams encountered a range of different experiences in terms of their curriculum, syllabus and relations with others.</p>
BARKER LUNN, J.C. (1970)	To compare the impact of streaming with non-streaming on junior school pupils' levels of achievement.	A comparison of the achievement gains of pupils in 36 streamed junior schools with those of pupils in 36 non-streamed junior schools, matched by social class.	There were no significant differences in the achievement gains of pupils in streamed schools compared with those in non-streamed schools.

REFERENCE	FOCUS OF RESEARCH	SAMPLE	FINDINGS
<p>BOALER, J. (1997a)</p>	<p>To compare the responses of secondary school pupils who are set with those who are in mixed ability groups for mathematics.</p>	<p>Two secondary schools, one which set pupils for mathematics and one which used mixed ability teaching. A cohort of pupils from each school was tracked from Year 9–11.</p>	<p>Pupils in mixed ability classes achieved more than those who were put into sets despite comparability of cohorts on entry. The success of some high ability pupils within the settled environment related to their ability to adapt to the learning style of increased pace, competition and pressure. Pupils who could not adapt (such as those from working-class backgrounds and girls) experienced difficulties which led to disaffection and underachievement.</p>
<p>BORG, W.R. (1965)</p>	<p>To investigate the effects of an ability grouping system that differentiates the curriculum by adjusting the rate of presentation and a random grouping system that differentiates the curriculum through enrichment. In relation to elementary junior high and senior high school pupils,</p>	<p>Two adjacent school districts in Utah were selected. One district used ability grouping with acceleration while the other used random grouping with enrichment. The sample included 2,500 fourth- to ninth-grade pupils from both districts. This number increased to 4,000 by the second year. The pupils were tracked over a four-year period.</p>	<p>Neither ability grouping nor random grouping had a consistent general effect on the achievement level of pupils at any of the grade levels tested. Ability grouping may motivate high ability pupils to realise their achievement potential but has no effect on pupils of average or low ability.</p>



REFERENCE	FOCUS OF RESEARCH	SAMPLE	FINDINGS
DOUGLAS, J.W.B. (1964)	To explore the effect of streaming on primary school pupils as part of a study which aimed to investigate how much potential ability was being 'wasted'.	The sample for the main study included all children born in the first week of March 1946, in England and Wales. Of these children, those who were in two-stream schools, who had been streamed by ability before their eighth birthday and had stayed in the same schools from then until their 11+ were used in the study on ability grouping (n=491).	<p>Over time, the average achievement level of pupils in the top stream increased while the average achievement level of pupils in the lower stream decreased.</p> <p>Teachers were influenced by pupils' social background when allocating them to streams.</p> <p>Pupils rarely changed streams.</p> <p>Pupils took on the characteristics of the stream to which they were allocated.</p> <p>Streaming reinforced social class divisions.</p>
FOGELMAN, K., ESSEN, J. and TIBBENHAM, A. (1978)	To investigate whether streaming, setting or mixed ability grouping is most effective at raising the attainment of secondary school pupils.	Data from the National Child Development Study which tracked all children born during the first week of March 1958 in the United Kingdom (n=16,000 approximately).	<p>Streaming, setting and mixed ability grouping produced no significant differences among pupils' attainment levels in reading and mathematics.</p>
GOLDBERG, M.L., PASSOW, A.H. and JUSTMAN, J. (1966)	To assess the effects of ability grouping on the academic and personal-social learning of elementary school pupils.	2,200 fifth-grade pupils from 45 New York City elementary schools were organised into 86 classes on the basis of 15 ability-grouping patterns (from very heterogeneous to homogenous). The pupils were given pre-tests at the beginning of the fifth grade and post-tests at the end of the sixth grade.	<p>Narrowing the ability range in the classroom had no significant effect on pupil performance.</p> <p>The pattern of broadest ability spread (mixed ability grouping) was most consistently associated with greater academic gains for all pupils.</p> <p>No ability grouping pattern or combination of patterns was best for all pupils in all subjects.</p>

REFERENCE	FOCUS OF RESEARCH	SAMPLE	FINDINGS
HARGREAVES, D.H. (1967)	To describe the structure and consequences of organisation and behaviour in a streamed secondary school.	The fourth years (Year 10) in a secondary modern school for boys (n=100 approximately).	<p>The higher a boy's stream, the more likely he was to be committed to the school's values, attend regularly, participate in school activities, establish friendship ties and like the school and its teachers.</p> <p>Streaming created a polarisation of sub-cultures within the pupil population between those labelled 'successful' and those labelled as 'failures' which led to the development of pro- and anti-school values which impacted on pupil achievement.</p>
HARTILL, R.M. (1936)	To investigate the effects of homogeneous grouping compared with heterogeneous grouping on elementary school pupils.	The sample included 1,374 fifth- and sixth-grade pupils from 15 different elementary schools in New York City. Half of the pupils were grouped heterogeneously in the first term and homogeneously in the second term. The other half were grouped in the reverse order.	There were no significant gains made by pupils grouped homogeneously and those grouped heterogeneously.

REFERENCE	FOCUS OF RESEARCH	SAMPLE	FINDINGS
<p>JACKSON, B. (1964)</p>	<p>To investigate the extent of, and effects of, streaming on the schooling experiences of primary school children in England and Wales.</p>	<p><i>Phase 1:</i> A third (n=660) of all primary schools in England and Wales which were large enough to implement streaming.</p> <p><i>Phase 2:</i> 81 junior children from ten streamed schools were matched with 81 junior children from ten unstreamed schools.</p>	<p><i>Phase 1:</i> The majority (96%) of schools used some form of streaming.</p> <p>A third of schools failed to use objective tests in their allocation of pupils to streams.</p> <p>Pupils from working-class backgrounds and those born in the summer were over-represented in the lower streams.</p> <p><i>Phase 2:</i> Streaming compared with non-streaming had little effect on the achievement of high and middle ability children. However, for low ability children, streaming had a detrimental effect.</p> <p>On average, non-streaming led to considerable social advantages for pupils.</p>
<p>KERCKHOFF, A.C. (1986)</p>	<p>To investigate whether the effects of ability grouping, in British secondary schools, lead to the 'traditional' view that all pupils gain, or to the 'divergent' view that high ability pupils gain at the expense of low ability pupils.</p>	<p>Based on data from the National Child Development Study of all children born in the United Kingdom during the week of 3-9 of March 1958.</p>	<p>Found support for the 'divergent' theory, i.e. that grouped pupils of low ability achieved less than their counterparts who were not grouped while grouped high ability pupils achieved more than their non-grouped counterparts.</p>

REFERENCE	FOCUS OF RESEARCH	SAMPLE	FINDINGS
LACEY, C. (1970)	To investigate the effects of streaming on the developments of sub-cultures, as part of a wider study investigating the social mechanisms within a secondary school.	A boys' grammar school in the North West of England.	<p>The differentiation of pupils into streams led to a polarisation between pupils. Those who were academically successful (in the top streams) developed pro-school sub-cultures while those who were academically unsuccessful (in the bottom streams) developed anti-school sub-cultures.</p> <p>The relationship between differentiation and polarisation was also found to be related to social class. Thus the higher a pupil's stream (level of academic success), the more likely they were to adopt a pro-school sub-culture and the more likely they were to be from a middle-class background.</p>
SLAVIN, R.E. and KARWEIT, N.L. (1985)	To compare the effects of whole-class teaching with within-class grouping on elementary school pupils.	The sample comprised two groups: 345 pupils in 15 grade 4-6 classes in one racially heterogeneous school district in the USA; and 480 pupils in 22 grade 3-5 classes in one racially homogeneous school district in the USA. All of the pupils were randomly assigned to different treatments for a semester.	Within-class grouping compared with whole-class teaching (mixed ability classes) led to a significantly greater increase in pupil achievement in mathematical computation (as opposed to mathematical concepts and applications) for pupils in both school districts.

<b>REFERENCE</b>	<b>FOCUS OF RESEARCH</b>	<b>SAMPLE</b>	<b>FINDINGS</b>
<p>SVENSSON, N.E. (1962)</p>	<p>To investigate whether any consistent relationship existed between pupil achievement and class organisation.</p>	<p>Data were collected initially from a representative sample of almost 11,000 fourth-grade pupils in Stockholm during 1955/56.  Data were then collected from different sub-samples of this group as they progressed from the fourth to the ninth grade.</p>	<p>The age at which high ability pupils were streamed had no effect on their attainment levels at 15.  Low ability pupils attained more in unstreamed groups than in streamed groups.</p>
<p>WALLEN, N.E. and VOWLES, R.O. (1960)</p>	<p>To investigate whether individualised teaching (non-grouping) was more effective than grouped instruction (within-class grouping) and the extent to which the effectiveness of grouping systems was dependent on individual teachers.</p>	<p>Two elementary schools, each containing two sixth-grade classes.</p>	<p>No significant differences were found between grouping and non-grouping on pupil achievement.  Teachers had a significant impact on the effectiveness of grouping systems in terms of pupil achievement.</p>

## B.2 Key meta-analyses and reviews

REFERENCE	FOCUS OF RESEARCH	SAMPLE	FINDINGS
<p>HARLEN, W. and MALCOLM, H. (1997)</p>	<p>To conduct a best evidence synthesis of studies, meta-analyses and reviews on ability grouping at the primary and secondary level in order to highlight the main findings.</p>	<p>Studies were selected for inclusion on the basis of a set of criteria which was premised on Slavin's (1986) best evidence approach.</p>	<p>There was no evidence that streaming or setting compared with non-grouping raises the achievement of pupils at either the primary or secondary level, in any subject or for pupils of any particular ability.</p> <p>At the primary level, within-class grouping for mathematics increased pupil achievement for all pupils.</p>
<p>KULIK, C-L.C. and KULIK, J.A. (1982)</p>	<p>To conduct a meta-analysis on the effects of ability grouping on secondary school pupil achievement and schooling experience.</p>	<p>A total of 52 objective, comparative studies of grouping fulfilled the list of criteria.</p>	<p>Pupils from grouped classes outperformed pupils from non-grouped classes by a small amount.</p> <p>There was little difference between grouped and non-grouped pupils' attitudes towards school.</p> <p>The effects of grouping on pupil self-concept were positive but minor.</p>
<p>KULIK, C-L.C. and KULIK, J.A. (1984)</p>	<p>To use meta-analytical techniques to investigate the effects of ability grouping on elementary school pupils.</p>	<p>The sample included 31 studies which investigated the effects of ability grouping on the achievement levels and self-concepts of elementary pupils.</p>	<p>In general, pupils achieved more in grouped classes compared with those in non-grouped classes, but the benefits were relatively small.</p> <p>In studies where programmes were designed specifically for gifted/high ability pupils, grouping raised achievement test scores by a significant amount.</p> <p>The effects of grouping compared with non-grouping on pupil self-concept were minor.</p>

<b>REFERENCE</b>	<b>FOCUS OF RESEARCH</b>	<b>SAMPLE</b>	<b>FINDINGS</b>
<p>KULIK, J.A. and KULIK, C-L.C. (1987)</p>	<p>To conduct a meta-analysis on the effects of ability grouping on pupil achievement.</p>	<p>A total of 109 studies which met a set of criteria. 90 studies focused on streaming and 19 on within-class grouping.</p>	<p>Streaming had a small, positive effect on the overall achievement of pupils.                      Within-class grouping compared with non-grouping increased pupils' overall achievement levels regardless of pupils' levels of ability.</p>
<p>LOU, Y. <i>et al.</i> (1996)</p>	<p>To conduct a meta-analysis aimed at investigating the effects of within-class grouping on pupil achievement at the elementary, secondary and post-secondary levels.</p>	<p>A total of 66 studies met the necessary criteria for inclusion in the meta-analysis.</p>	<p>Pupils of all ability levels benefited from being placed in small groups.                      Homogeneous within-class grouping, compared with heterogeneous within-class grouping had a slightly greater positive impact on pupil achievement.                      The effectiveness of within-class grouping increased when it was combined with the adaptation of instruction methods and materials for small-group learning.</p>

REFERENCE	FOCUS OF RESEARCH	SAMPLE	FINDINGS
SLAVIN, R.E. (1987)	To conduct a best evidence synthesis (which combines features of meta-analytic and narrative reviews) on the effects of different forms of ability grouping on the achievement of elementary pupils.	A total of 29 studies which met a set of methodological criteria. This included 14 studies on streaming, seven studies on setting and eight studies on within-class grouping.	<p>Streaming compared with non-streaming had no effect on pupil achievement. This remained consistent in reading and mathematics and for pupils of different ability levels.</p> <p>The findings on setting for reading and mathematics were inconclusive.</p> <p>In comparison with whole-class teaching, <b>within-class grouping</b> for mathematics had a positive effect on pupil achievement in the upper elementary grades. There was insufficient research on within-class grouping in reading or in the primary grades from which to draw conclusions.</p>
SLAVIN, R.E. (1990a)	To conduct a best evidence synthesis (which combines features of meta-analytic and narrative reviews) on the effects of streaming on the achievement of secondary school pupils.	A total of 29 studies which met a set of methodological criteria.	<p>Across the 29 studies, there were no significant effects of ability grouping on pupil achievement.</p> <p>There were also no consistent patterns in terms of: pupils' ability levels, the number of ability groups to which pupils were assigned, subject areas, study location or date of study.</p>



## **STREAMING, SETTING AND GROUPING BY ABILITY**

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## **streaming, setting and grouping by ability a review of the literature**

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Since the Education Reform Act of 1988 increasing numbers of schools have returned to the practice of grouping pupils by ability. This has partly been in response to policy changes such as the implementation of the National Curriculum, and the introduction of market-led principles which has increased parental choice and increased competition between schools, through the publication of league tables.

This report attempts to assess the implications of the adoption of ability grouping practices by schools through a review of the research literature on ability grouping. The review focuses on streaming, setting and within-class grouping in relation to mixed ability teaching and highlights their effects on:

- pupil achievement, both overall and in relation to pupils' of different ability levels;
- institutions, in terms of organisational requirements;
- teaching approaches and teachers' attitudes and perceptions;
- pupil attitudes, self-perceptions, friendship patterns, school involvement and social characteristics;
- the changing British context.

This report will be of interest to teachers, LEA advisers and policy makers who are concerned with the impact of ability grouping on pupils both academically and socially.

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