AGE OF STARTING SCHOOL AND THE EARLY YEARS CURRICULUM

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Introduction

Earlier this year, I was asked by OFSTED to summarise recent research into early childhood education. I am grateful to them (and to the NFER) for funding my time to work on this and for giving me permission to share the results of the review with you today.

This paper presents an overview of research in this area. For those of you interested in reading a précis of each study, I have prepared an annotated bibliography of relevant research (Sharp, 1998).

In order to narrow the focus of the review, I decided to concentrate on research addressing two deceptively simple questions.

When should children start school?
When should more 'formal' skills, such as reading and mathematics, be taught?

There has been a great deal of interest in these questions. This is not surprising given recent developments in pre-school policy, such as the increasing admission of four-year-olds to reception classes, the introduction of Desirable Learning Outcomes (SCAA, 1997), inspection of pre-school settings and, most recently, the introduction of statutory baseline assessment (QCA, 1998).

I have tried to find out what the research evidence has to say about school starting age and the early years curriculum. In doing so, I have not focused on whether attending a high-quality pre-school has an effect on children's later achievement, neither have I included studies on the contribution of parents to early learning. (Readers interested in the latter issue may wish to refer to the review prepared by Oliver *et al*., 1998, which is summarised in the accompanying bibliography, and White *et al*., 1992).

International studies

The first group of studies that may be helpful in addressing questions about the early years curriculum and school starting age are international comparisons. In particular, comparisons with other countries, which have different school starting ages, raise questions about the extent to which an earlier school starting age contributes to academic achievement. It is also interesting to consider the effects of educating children outside their chronological year-group, which rarely happens in this country but is much more common elsewhere.

Does an earlier school starting age help children to achieve?
Should some children be able to start school later?

Our statutory school starting age (the term after a child's fifth birthday) is low in relation to that of other countries, most of which set six or even seven as the official starting age (Ball, 1994; Woodhead, 1989; West and Varlaam, 1990). In practice, our actual school starting age is earlier still. Most English and Welsh children start school at four, because of the growing practice of admitting children to reception class at the beginning of the year in which they become five.

What do international comparisons tell us about the effects of school starting age on achievement? Recently the Third International Mathematics and Science Study (TIMSS), revealed that England did comparatively well in science but poorly in mathematics (Harris *et al*., 1997). Unfortunately, the TIMSS study did not consider the relationship between achievement and age of starting school in different countries.

However, an earlier international study did attempt such an analysis, although UK countries did not take part. The International Association for the Evaluation for Educational Achievement (IEA) measured reading standards in 32 educational systems (Elley, 1992). The study assessed the reading standards of pupils aged nine and 14. Children in most of the countries started school at age six, a few at five and some (mainly those in Scandinavian countries) did not start school until the age of seven. The report includes an analysis of the relationship between age of starting school and reading performance. Against expectations, this showed that the top ten scoring countries had a later starting age (the mean school starting age of these countries was 6.3, compared with a mean of 5.9 in the ten lowest scoring countries). But the top-achieving countries were also the most economically advantaged. When the researchers carried out a further analysis controlling for each country's level of 'development', the trend for older starting ages to be associated with better results was reversed. However, the author points out that the differences were small and that children in 'later starting' countries had largely caught up by the time they reached the age of nine.

Earlier this year a Channel 4 *Dispatches* programme was broadcast, accompanied by a report by Clare and David Mills (Mills and Mills, 1998). Although this is more of a piece of journalism that a 'research' report, I have included it because it was the focus of a great deal of media attention and debate. The report compared early childhood approaches in England with those in Hungary, German Switzerland and Flemish Belgium. The authors argue that the early years curriculum is an important factor in the progress of children, and that this country's approach is detrimental to children's development. The three comparison countries all had six as school starting age. Their pre-school approach is described as concentrated on children's social skills, developing attention span, listening and memory, behaviour and concepts. The authors state that Hungarian, German Swiss and Flemish teachers do not teach reading, writing or written number until children are six because they believe that some children are unable to cope with these skills and if forced to do so the children would fail. However, children's skills in these areas are observed to develop rapidly once they are taught at school. Among other things, the authors recommend changing our early years curriculum, increasing the school starting age to six and allowing some children to spend longer in pre-school.

Some work by Sig Prais (Prais, 1997) has also raised the question of flexible school starting ages. He studied children's mathematics attainment in Switzerland and Barking and Dagenham. In Zurich, primary classes contained over one in five children who were a year older than their chronological year group. This was largely the result of delayed entry, based on recommendations by kindergarten teachers. The author gave a mathematics test to a small number of Swiss and English nine- and ten-year olds. He found that the Swiss children performed better on this test, although they were younger and had started school a year later. He suggests that schools in this country should

allow a four-month flexibility in starting ages so that older, more able children could go up a year and younger, less able children could spend longer in pre-school. One of the benefits of this, he argues, would be a reduction in the spread of ability within the class, thus making it easier for teachers to adopt whole-class teaching methods.

It would be interesting to know whether delaying entry to school has positive or negative effects for the children concerned. A study by Crosser (1991) suggested that there were academic advantages to summer-born children from delaying entry, particularly in relation to boys' reading attainment. The study looked at the later school attainment of summer-born children who were matched for ability and sex, but differed in relation to their age of entry to school. However, the study did not take account of the social class background of pupils, and this could be important because it is known that middle-class parents are more likely to hold their children back from starting school. A large-scale US survey (Zill *et al*., 1997) focused on a sample of children who were old within their kindergarten year-group. There were two main reasons for the delayed entry of pupils to first grade. Some of the children were 'retained' as a result of teacher recommendations, often supported by school assessment. Others had been 'held back' from starting school by their parents, because parents believed their child was not ready for school, or that it would give their child an advantage to be among the oldest, rather than among the youngest in the class. The figures show that delayed entry was quite a common experience for young children: five per cent of children had been retained and nine per cent had been held back. In general these 'delayed' children were younger in the age group and they were predominantly boys. There were also ethnic differences between the two groups: white children tended to be held back; whereas black and Hispanic were retained. On the basis of parents' reports of their children's progress, the survey was unable to identify any compelling disadvantages or advantages to the children of delayed entry to school.

Although inconclusive in relation to the effects of retention policies, it is interesting to note the preponderance of younger children, boys and black children among those who were retained, and to consider the implications of this in relation to the introduction of baseline assessment in this country. For example, recent research by Sainsbury (1998) shows that older children, girls, those with pre-school experience and those with English as their first language performed significantly better in baseline tests. (Further research on baseline assessment will be published in a forthcoming special edition of the *Journal of Research in Reading.*)

Starting school here

Why do children in the UK start school so young?
Does age affect progress in the reception year?
Do season of birth and length of schooling matter?

In a very useful paper by Martin Woodhead, the genesis of our early school starting age is explained (Woodhead, 1989). The term after a child's fifth birthday first became

enshrined as the school starting age in 1870 Education Act. There was very little parliamentary debate on this issue at the time, although some MPs clearly favoured six as the school starting age. Reasons put forward in favour of setting the school starting age at five were related to child protection (i.e. protection from exploitation at home and unhealthy conditions in the streets). There was also a political imperative to appease employers because setting an early starting age enabled an early school *leaving* age to be established, so that children could enter the workforce. Woodhead points out that the school starting age was not decided on the basis of any developmental or educational criteria. He calls for a debate on the rationale for school admission policies and the curriculum offered to young children in schools.

Two recent studies have addressed the second and third questions. Peter Tymms and his colleagues (Tymms *et al*., 1997) have collated information from the Performance Indicators in Primary Schools (PIPS) database. Their paper presents information from a sample of over a thousand children in 38 schools who were assessed at beginning and end of the reception year. The study used assessments of mathematics and reading, and the authors used multilevel modelling to assess both children's attainment and progress. They found that progress was strongly related to pre-test scores but there were also large variations between schools. Children who were older in the year-group did better in both mathematics and reading attainment. Older children also made more progress in mathematics during the reception year. There were no age-related differences in reading progress.

The question of the influence of age and length of schooling was addressed in some research carried out at the NFER (Sharp and Hutchison, 1997). The study looked at 1995 KS1 results, using a national random sample of over 3,000 children in 114 schools. These children had experienced different lengths of schooling, due to different school entry policies. The research found that children's attainment at KS1 was significantly related to age/season of birth. Length of schooling was also related to attainment. An analysis of length of schooling related to three seasons of birth showed differential patterns in relation to achievement at KS1. Among the older (autumn-born) children, those with the full reception year did best. But for younger (summer-born) children, those with the full reception year did not do as well as those of the same age with one or two terms less time at school. This relationship held even when other factors (such as sex, and children's eligibility for free school meals) were taken into account.

Early experiences - later effects

What are the effects of different pre-school curricula?
Do early readers do better later?
How does pre-school experience affect children's behaviour in school?

There do not appear to be many studies addressing these issues, and much of what there is originates in the USA. First, a well-known piece of research by Schweinhart and Weikart (1998) followed a small number of disadvantaged children who attended one of three pre-school programmes. A feature of the design was that children were randomly allocated to the three types of programme. The use of random assignment is important because it means that any differences between the groups are likely to be the result of the programmes, rather than the influence of selection effects. The programmes in question were *High*/*Scope* (where children are encouraged to follow a pattern of plan-do-review), *Direct Instruction* (teacher-led, with academic lessons) and *Nursery School* (teachers used themes and children had free choice of activity for much of the time). At first all three groups showed a jump in IQ, followed by a decline to age 10. But the strongest differences emerged in the long-term. At age 23, both the nursery and High Scope groups were doing better on a range of 'real-life' measures (such as rates of arrest, emotional problems and suspension from work). The authors suggest that an emphasis on child-initiated activities in these two pre-school programmes developed the children's sense of social responsibility and their interpersonal skills, and that this had a positive impact in later life.

A useful overview of research into US pre-school programmes is provided in a book by Bob Slavin and his colleagues (Slavin *et al*., 1989). In relation to the content of effective programmes, they conclude that several different types of curricula may be helpful to young children from disadvantaged backgrounds. Summing up the characteristics of such programmes, the authors state: 'effective pre-school programs tend to emphasise exploration, language development and play, not academics'.

I have drawn evidence on age of starting reading from two sources: an article by Peter Blatchford and Ian Plewis describing research with a sample of children in London (Blatchford and Plewis, 1990), and an overview of US research on reading by Jeff McQuillan (McQuillan, 1998). Both demonstrate that children who can read early do better later. According to McQuillan, children who can read before they start school usually come from homes where books are available and where parents read books. Although parents of these early readers supported their children's reading they do not 'push' them to read, nor do they use most of the formal strategies used in schools. So if early readers do better later, is it not a good idea to teach children to read early on? McQuillan reviews the evidence from a small number of experimental studies of US children taught to read 'early' (at age five). These showed that any advantage was short-lived: the later readers had caught up by around age eight. He concludes that early interventions to teach reading are unlikely to combat disadvantage, but that early access to reading with supportive adults is a key factor.

Finally, a study in England provided evidence on the effects on reception children of attending different kinds of pre-school (Jowett and Slyva, 1986). Sandra Jowett and Kathy Sylva studied 90 children attending schools in working-class areas. They

observed two matched groups of children who had attended either a local authority nursery or a poorly-resourced playgroup. Significant differences were found favouring nursery attendees, including more involvement in play of high cognitive challenge and more persistence in face of difficulty. Playgroup children appeared more teacher-dependent: they stayed near the teacher and were more likely to ask for teacher's help if in difficulty, rather than trying to find alternative strategies for themselves.

5. Implications

When should children start school?
What skills should be emphasised?
What further research do we need?

The two questions posed at the outset are apparently simple, but are difficult to answer from the research evidence. As far as I am aware, there is no definitive evidence from experimental studies charting the progress of children who started school earlier or later. International comparisons are indirect evidence at best, because they involve such different cultures and educational systems. What we can say is that a later start appears not to be a disadvantage to children's progress (although it is important not forget the important contribution made by children's experiences at home and in pre-school). Certainly, there would appear to be no compelling educational rationale for a statutory school age of five or for the practice of admitting four-year-olds to school reception classes.

As far as the types of experiences offered in early childhood settings are concerned, there does appear to be some consensus from the research evidence. Young children (aged five and under) seem to do best when they have opportunities to socialise, make their own choices and take responsibility for their own learning. It appears possible for pre-schools to instil resilience and a 'can do' attitude, which serves children (especially those from disadvantaged backgrounds) well all their lives. Emphasis on spoken language and understanding of basic concepts, such as time and number, are recommended, as are access to books and to people who read to them, but not 'formal', academic teaching.

We do need further research in this country. I know that researchers can always be relied on to call for further research, but in this case the evidence-base is decidedly patchy and relies on relatively few studies. There are two pieces of work currently under way. The team led by Christine Pascal and Tony Bertrum at Worcester have secured funding for a new project: *Accounting Early for Lifelong Learning*, which will extend their existing research and development project to look at the relationship between process and outcomes in a variety of different pre-school settings. (For a description of some of the early results from this study, see Pascal *et al*., 1998).

Kathy Sylva and colleagues are currently involved in a project for the DfEE which involves tracking children for a five-year period from pre-school into school. I will be fascinated to find out what these and other studies have to tell us about the effects of pre-school education on children in this country.

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* Annotated bibliographies of these studies have not been included in the review.