

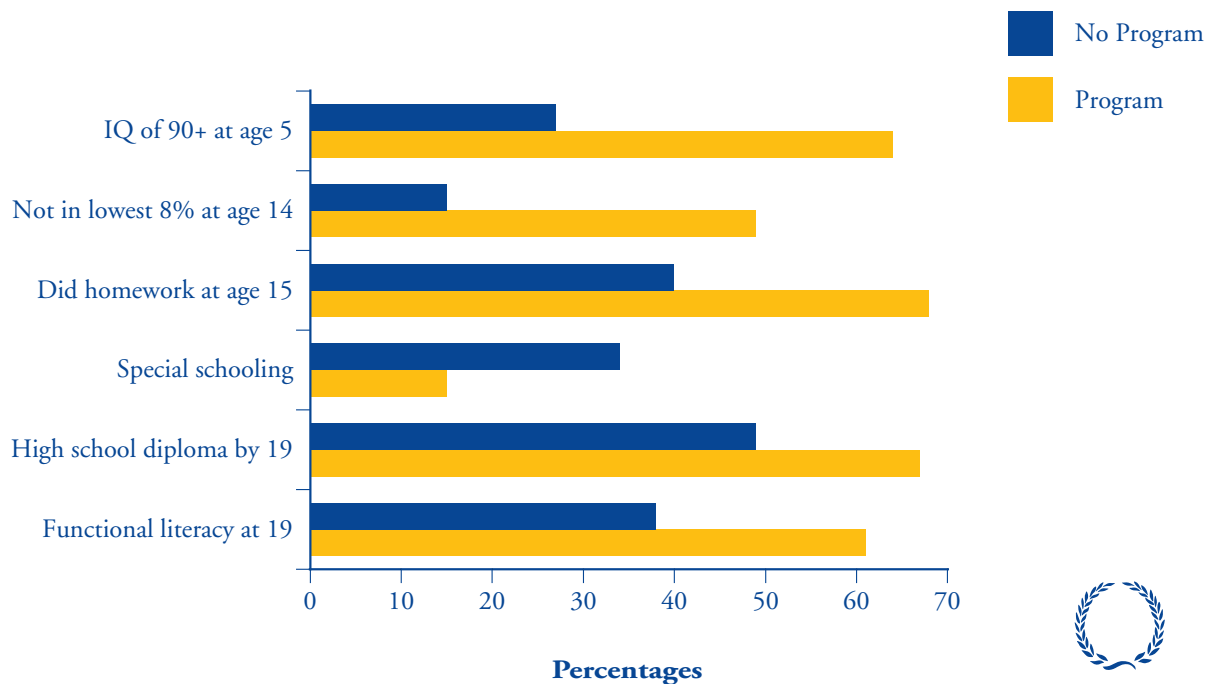
# RESEARCH BRIEFING

## FROM PRE-SCHOOL TO SCHOOL: A REVIEW OF THE RESEARCH LITERATURE

### Key Findings

- Convincing evidence, especially from the United States, has shown that high quality pre-school education can not only help children from disadvantaged backgrounds to gain social and cognitive skills, which are advantageous when they begin compulsory schooling, but can also have beneficial educational effects persisting through adolescence into early adulthood. Figure 1 encapsulates many of the key educational benefits from one of the best known and best designed early interventions, the Perry Pre-school Project.
- The long-term educational benefits of pre-schooling for disadvantaged children have, however, more often taken the form of reductions in the numbers assigned to special education or dropping out of school prematurely than of particularly impressive performance in examinations or standardised cognitive tests.

**Figure 1: Educational achievements of children who did and did not receive pre-schooling in the Perry Pre-school Project (adapted from Schweinhart, Barnes & Weikart, 1993)**



INVESTOR IN PEOPLE

- From the Perry Pre-school Project, but with some supportive evidence from other projects, have come indications that high quality interventions for economically disadvantaged children during the pre-school years can affect other aspects of their early adult lives than education, including reduced dependency on welfare benefits and less involvement in crime. The generalisability of such findings is, however, a matter of debate and it is possible that long-term impact on social behaviour of seriously disadvantaged children may require considerable work with the parents on an individual and supportive basis rather than relying entirely on what happens in a nursery classroom.
- The quality of the pre-schooling is crucial. Children who attended poor quality pre-schooling have been shown to perform worse in primary school and to show more behaviour problems in class than those who spent their early years at home.
- Published research in the United Kingdom on the persistence of the beneficial effects of pre-schooling has, to date, been less conclusive than that of the best American studies. The reason for this would seem to lie more in the limited scope and time-scale of most UK studies, rather than in pre-school education being necessarily any less effective in the UK.
- It must also be acknowledged that many studies on both sides of the Atlantic have reported the measured effects of pre-schooling to be short-lived and to have disappeared within a year or two of entry to primary school.
- Good research on the lasting effects of pre-schooling requires considerable investment in terms of time and personnel as well as careful advance planning. Lacking these advantages, many studies are unfortunately inconclusive.
- The weight of evidence suggests that the majority of very young children suffer no measurable ill effects from regular non-parental care in infancy, provided it is of good quality. Indeed, some Swedish studies have shown benefits from attendance at childcare centres in the first year that were still apparent in early adolescence.
- Research aiming to discover which is the most effective of the various forms of pre-schooling in the United Kingdom (eg nursery schools or classes, playgroups, local authority and private day nurseries) has produced inconclusive results. In many countries the emphasis is now on identifying the processes and curricular elements of effective pre-schooling as a more fruitful line of exploration than comparisons of different organisational types of early education.
- Although many of the long-term studies of effective pre-schooling have been carried out with disadvantaged children, there is evidence of beneficial effects on non-disadvantaged children also, which have sometimes been found to persist until at least adolescence.
- Both boys and girls have been shown to benefit from pre-school education. The medium- and long-term effects may differ but this would seem to reflect the different pressures on boys and girls in later childhood and adolescence.
- Especially for disadvantaged children, the most important long-term benefits of pre-school education would seem to be at least as much on motivation and attitudes towards learning as in direct cognitive gains.

## **1. EVIDENCE FOR THE LASTING BENEFITS OF PRE-SCHOOLING**

### **1.1 Changing Perspectives**

During the past 2 decades, a series of studies, especially from the United States and Scandinavia, have shown the lasting benefits of pre-school education. Much, though not all, of the American research has concentrated on children from economically disadvantaged backgrounds. The current picture is very different from that of the early 1970s when the early education community was adjusting to the results from the first national evaluation of the American Head Start project by the Westinghouse Learning Corporation<sup>45</sup>, which showed few visible benefits of programme attendance after one year of elementary school and none after 3 years. The few comparable studies of the period in the British Isles which followed children from pre-schooling into primary school were also generally disappointing. This led one major review of the period<sup>42</sup> to conclude that the expansion of early schooling in order to avoid later school failure or to close the social class gap was “doomed to failure”.

What has caused the change of perspective? 2 main factors would seem to be, first, some much more optimistic results in the 1980s and 1990s and, secondly, greater realism in expectations about pre-schooling than when Head Start was launched. No longer is it assumed that a programme lasting a few weeks can reverse all the ill effects of deprivation. Because there is a larger body of evidence from the United States than the British Isles on the effects of pre-schooling, the former will be reviewed first.

### **1.2 American evidence of the benefits for disadvantaged children**

In the mid-1970s a group of American early years experts who had been independently devising carefully planned ‘high quality’ pre-school programmes for disadvantaged children which had more promising results than in the Westinghouse evaluation, collaborated in the Consortium for Longitudinal Studies. They pooled existing data and carried out 2 further follow-up studies<sup>21 33</sup>. Gains in measured IQ during the pre-school years subsequently faded, although not as rapidly as in the Westinghouse study, but the children maintained some important advantages over those from the control groups. In particular, they were significantly more likely than the control groups to remain in an age-appropriate class in a mainstream rather than a special school (by seventh grade this was so of 70.5% of them as compared with 54.4% of the control group children). Those with pre-schooling were also more likely than the control groups to complete high school and not to drop out early.

Best known of the Consortium studies is the Perry Pre-school Project from Ypsilanti, Michigan, USA, later called the High/Scope Project<sup>36</sup>. With remarkably little attrition, this study has compared the progress to age 27 of 58 children who attended 2 years of half-day nursery education, with supportive home visiting, and 65 children for whom there was no pre-school intervention. All the children were black, economically disadvantaged and had measured IQs below 90 at age 3.

Despite losing the IQ advantage they had at the end of pre-school, the former High/Scope children were, in comparison with the control group, more likely to remain in mainstream education, to graduate from high school and to enrol in post-secondary education. At age 14 they outperformed the control group in standardised tests of school subjects, at age 15 they expressed more commitment to education and at age 19 they scored higher on a test of functional literacy and practical knowledge. At age 27 they had fuller employment histories, were less dependent on welfare and less likely to have been involved in crime, especially as persistent offenders. More of

the girls were married and fewer children had been born out of wedlock. A pattern of greater 'school competence' had been translated into greater 'social competence' in early adulthood.

It must be pointed out, however, that although the High/Scope group fared much better than their carefully matched comparison sample, by national standards even their test scores from later childhood onwards were quite poor and about a third of them had a police record. Pre-schooling had significantly improved their chances but had not eliminated the effects of disadvantage. A generally similar conclusion can be drawn from the other Consortium studies and from most other 'successful' American pre-school interventions to combat disadvantage<sup>16</sup>.

Rather different patterns of results have, however, been found in 2 particularly intensive interventions, the Abecedarian<sup>5</sup> and Milwaukee<sup>11</sup> projects, which provided full-day pre-schooling from the first few months of life. These projects had more persistent effects upon measured IQ, respectively until age 12 and until at least age 14-15, but the children from these projects did not show some of the important other benefits seen in the Perry Pre-school attenders. The Milwaukee pupils lost their academic advantages very early in primary school, although the project director blamed this on a failure of inner-city schools to educate. While the Abecedarian pupils were continuing to outperform their comparison group in school subjects at age 15 and were more likely to have avoided special education or retention, a very recent paper<sup>6</sup> reports no difference in the criminal records by age 21 of experimental and control subjects.

No other study has been as inclusive as the Perry Pre-school Project regarding the long-term social benefits of early intervention but there has been some supportive evidence from elsewhere, though not from the Abecedarian project. A Consortium study from Tennessee<sup>13</sup> also reported lower teenage pregnancies. The Syracuse University Family Development Research Program reported that fewer children from the programme than in the control group were processed as probation cases by age 16, although there were no visible academic benefits by that stage<sup>20</sup>. In a 10-year follow up of the Yale Child Welfare Program<sup>39</sup> boys from the programme were reported by their mothers and teachers to show less of the serious aggressive or acting out behaviours that often precede criminal involvement. In the 2 latter studies, in which participants had not yet reached the peak age of offending, the main emphasis at the pre-school stage was on working with parents although childcare was available. This was substantial and of high quality in the Syracuse study but ended at 30 months in the Yale study. Since the Perry Pre-school programme included 80 hours of home visits by teachers but home visiting during the pre-school years was not a feature of the Abecedarian project, there is a case for arguing<sup>38 46 6</sup> that, although centre-based programmes can have lasting effects on progress at school, individual and supportive contact with parents may be needed to bring about lasting differences in behaviour. More research and analysis is needed before any firm conclusion can be reached on this and currently there is no relevant research evidence from the British Isles.

Another merit of the Perry Pre-school, Syracuse and Yale projects has been their cost-effectiveness. Money invested in these programmes has already been or was in the process of being recouped through long-term savings in special education, welfare payments and judicial costs.

### **1.3 American evidence from local pre-school programmes**

The pre-school programmes in the previous section were high profile, well-resourced and led by creative experts in early education rather than what might be more generally expected from providers. The evidence that locally-managed pre-school programmes can have lasting benefits is more modest. The Chicago Child Parent Centre Program, when allowed to extend into the early

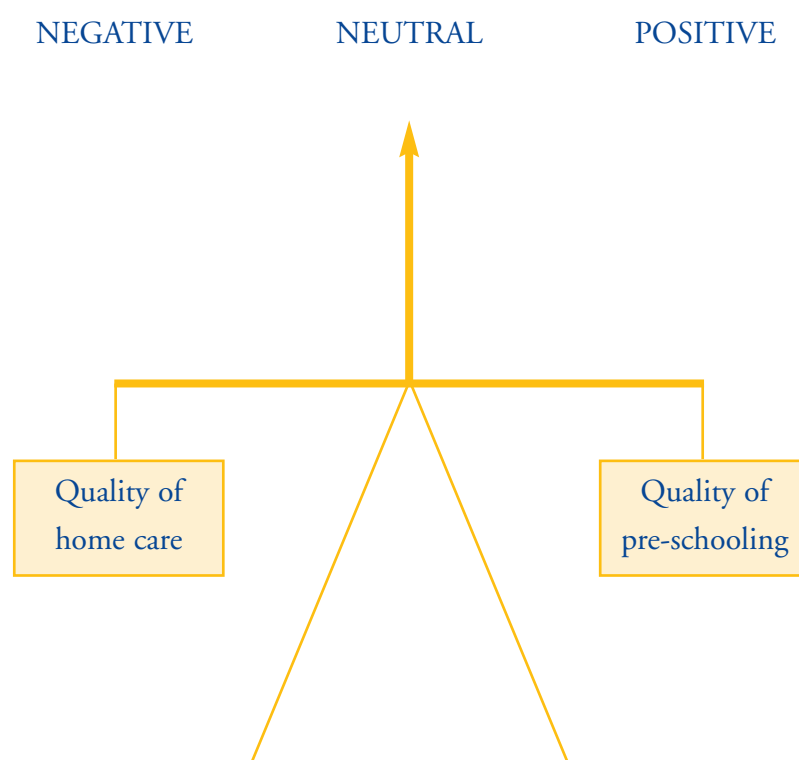
years of elementary school, has influenced subsequent school performance, especially in girls<sup>10 32</sup>. The Head Start Synthesis Study of 1985<sup>24</sup>, which pooled findings from all known statistically robust evaluations to date, showed some measurable effects of the post-1970 programmes lasting up to 2 years, while a few individual programmes did better still. Effects had, however, generally disappeared after 3 years and so the results can be considered as only somewhat better, rather than dramatically better, than those of Westinghouse. Unfortunately there have been no further published medium- or long-term national evaluations of Head Start, although one was announced as part of the programme's expansion in the 1990s. This will be awaited with interest, especially as local programmes have now had time to learn from the Consortium studies.

From America, where each State sets its own minimum standards for pre-schooling, which are not always rigorously enforced, has also come evidence that pre-schooling, if not of good quality, can have adverse lasting effects on both cognitive and social development<sup>44 3</sup>. Children enrolled at a young age seem particularly vulnerable to poor quality pre-schooling.

#### 1.4 A Diagrammatic Model

In a 1993 paper<sup>26</sup>, Professor Ted Melhuish of the University of Wales in Bangor, explained the diverse results from pre-school evaluations diagrammatically, as in Figure 2. He argued that the effects of pre-schooling depend on the ratio of the quality of childcare or 'educare' in the home to that in the nursery school or other pre-school centre. The quality of the 2 sorts of care can be represented as weights at the end of a balance beam. Only if the provision offered by the centre is in some way more stimulating and age-appropriate than that of the home (ie 'outweighs' it) will the pointer in the diagram swing to the right, indicating positive benefits. Other possibilities are that the centre's provision is less stimulating than that of the home, causing the pointer to swing left or that there is insufficient difference to move the pointer from its upright position.

**Figure 2: Effects of pre-schooling (adapted from Melhuish, 1993)**



## **1.5 Research Evidence on the Effects of Pre-schooling in the British Isles**

Most studies of the effects of pre-schooling (versus none) in the British Isles have been too short-term to provide conclusive evidence as to its lasting effects. Either the studies did not follow the children into primary school – for example, the evaluation of the Dundee Educational Priority Area<sup>14</sup> – so that it is not known how long advantages were maintained or else there was no pretesting before pre-schooling commenced. No sound conclusions about the effectiveness of pre-schooling can be drawn from studies which test for the first time on entry to primary school, let alone at age 7 or 8, unless it can be shown that attenders and non-attenders were initially very similar.

The best known recent analyses of the end of Key Stage 1 performance of children with and without pre-schooling have, at most, controlled on the basis of a simple socio-economic measure such as entitlement to free school meals or a neighbourhood index. This leaves undetermined the extent to which pre-school attendance was affected by such factors as the strength of the parents' belief in education or the perceived readiness of the child at age 3 for more than the home could provide; such factors could also be independently related to the end of Key Stage 1 assessments. Although children with pre-school education often perform better in Key Stage 1 assessments<sup>35 9</sup>, it is impossible in such circumstances to know how much of the difference should be attributed to the actual pre-schooling. (Insufficiently controlled studies are not peculiar to the UK, of course.)

More background variables than usual were controlled in the 1987 Child Health and Education Study (CHES) of children born in Great Britain in a single week in 1970<sup>30</sup>. The children who had no pre-schooling of any kind (nursery school, playgroup, etc.) came disproportionately from the more economically disadvantaged strata of society but their scores on cognitive tests at age 5 – and even more so at age 10 – were even lower than would have been predicted on the basis of their home circumstances. However, since the CHES study gathered no cognitive data before age 5, one cannot be absolutely sure that the poorer-than-expected performance of children without pre-schooling might not be due to unmeasured home factors or pre-existing developmental differences in the children rather than the actual lack of pre-schooling. The CHES study provides strong circumstantial evidence rather than conclusive evidence to support the case for pre-school education.

The nearest to a Consortium-type study in these islands was the Rutland Street Project in inner-city Dublin, which began in 1969<sup>17</sup>. Despite initially promising results, it was a major disappointment that scores in English and Irish at ages 8 and 10 – the main criteria – were no better than those of the no-programme control group. A follow-up survey at age 16, however, showed that, in comparison with the control group, the experimental group, and especially the girls, were more likely to stay on at school and obtain some qualifications in public examinations.

## **2. WHAT KIND OF PRE-SCHOOLING?**

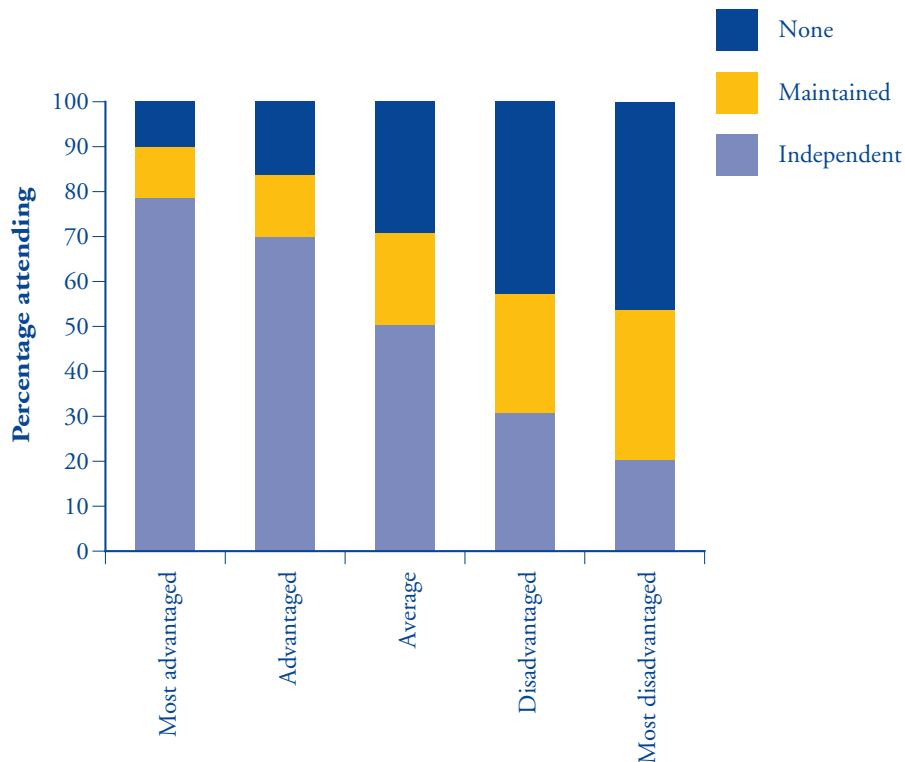
### **2.1 Comparisons of Different Organisational Types of Pre-schooling**

Evidence on the relative effectiveness of different forms of pre-schooling in the United Kingdom have been inconsistent and also bedevilled by:

- a. many children experiencing a variety of forms; and
- b. interactions between type of pre-schooling and social class.

In the CHES study, the more disadvantaged the child, the more likely that any pre-schooling was in the public sector (nursery school or class or local authority day nursery). Conversely, the more advantaged the child, the more likely that pre-schooling was in the independent sector (private or community playgroup or private sector nursery). See Figure 3.

**Figure 3: Pre-school Experience by Social Index group, from the CHES study (1987)**



When scores were adjusted for family background, the CHES study found children from nursery schools and playgroups doing best in primary school but, somewhat surprisingly, those from nursery classes doing relatively poorly. Other studies have produced somewhat different results. A 1995 study of Key Stage 1 test data on reading found middle-class children from playgroups outperforming those from nursery education or with no pre-schooling, whereas for working-class children the order was nursery education, no pre-schooling and, lastly, playgroups<sup>9</sup>. Jowett and Sylva's (1986)<sup>19</sup> observational study of 90 working-class children recently enrolled in primary school found that, in comparison with those who had attended playgroups, those with nursery education were more independent, more mature in their approaches to teachers and better able to engage in challenging tasks, either alone or in parallel with other children. While these were all good omens for later school progress, the 2 groups did not differ on a test of basic concepts. Clearly there is no simple answer to the question of which type of UK pre-schooling has best influenced primary school performance and the quality of the playgroups in particular may well have varied considerably from investigation to investigation. The picture is further complicated by evidence that both middle-class and less affluent parents in Great Britain are increasingly seeking to enrol their children in nursery or reception classes rather than in the playgroups they might have used formerly, especially in the year before commencing compulsory education. If the parents with the greatest concern for their children's education are doing this more than others, such a trend may at least partly account for results from recent piloting of baseline assessment measures reported by the Audit Commission<sup>2</sup> which showed children from nursery education having a clear advantage over those from playgroups, granted that the latter did better than those with no pre-schooling.

## 2.2 Indices of Programme Quality

A more profitable line of enquiry than simple comparisons of the effectiveness of different organisational categories of pre-schooling has been a search for the regulatable variables (eg child: adult ratio) and process variables associated with desirable developmental outcomes. The ongoing Effective Provision of Pre-school Education (EPPE) project<sup>34</sup>, in which Northern Ireland is participating, is seeking to identify such factors and their long-term effects within the context of 4 main categories of pre-schooling. For the purpose of this review, the fostering of desirable developmental outcomes in children is being regarded as the main criterion of pre-school 'quality', a term inevitably loaded with value judgements. Several recent writers have, however, pointed to alternative perspectives, such as meeting the reasonable needs of parents, which should not be ignored in an all-round evaluation of pre-school provision<sup>28</sup>.

Much of the research in this area has, admittedly, used concurrent social adjustment rather than long-term cognitive effects as the criterion and results have generally been in line with common sense, although some of the details were less predictable (see, for example, the review in Phillips et al., 1994<sup>31</sup>). Thus, young children's development in centre-based 'educare' tends to thrive better where there is a wide range of equipment and materials in suitable accommodation, where there is low staff turnover, where caregivers are trained in child development and where child: adult ratios are low. An English<sup>41</sup> and an American<sup>18</sup> study have both suggested that for children aged 3-5 a ratio of 8:1 may be an important threshold.

Good ratings on such structural and regulatable indices of quality can, however, only set the scene for good ratings on the more important but harder-to-measure process variables; they cannot guarantee them. Young children's developmental progress is more likely to be affected by their caregivers' or teachers' communication skills and responsiveness than by their formal qualifications or mere presence, although a caregiver with too many children in her charge will be unable to give them sufficient individual attention. Similarly, it is the use made of equipment in developmentally appropriate activities rather than the equipment itself that can extend children's abilities. The influence of the nature and frequency of utterances addressed by caregivers to children has been demonstrated in separate studies from Vancouver<sup>12</sup>, Bermuda<sup>23</sup> and London<sup>25</sup>; this is of particular importance since at least one major British study<sup>43</sup> demonstrated that the language experiences of working class children in a nursery class in the morning were less stimulating and verbally enhancing than their conversations at home with their mothers in the afternoons.

## 2.3 Comparisons of Pre-school Curricula

Another set of studies, mainly in the USA, have compared outcomes from different types of pre-school curricula rather than of pre-schooling versus no pre-schooling. Given the early age of formal education for many Northern Ireland children and widespread use of baseline tests in England which include measures of progress in the '3Rs' (with consequent temptations for pre-schools to coach to these tests) it is notable that the American evidence (for example, the Head Start Synthesis Study<sup>24</sup>) has shown heavily didactic teacher-directed pre-school programmes, eg Distar, to give only a temporary advantage over other types of programme, even in school subjects.

In a second longitudinal study at Ypsilanti<sup>37</sup> children on a Distar programme had by age 7 already lost their slight academic advantage over children from High/Scope and from a traditional nursery programme and were trailing them by age 15. Even more seriously, in comparisons with the other 2 groups at ages 15 and 23 on measures of 'life adjustment' and social responsibility, the Distar group's scores resembled those of the 'no-programme group' in the Perry Pre-school project, rather

than what might be expected from a group on an alternative pre-school program. In particular, the Distar group had committed more crimes and spent longer in special educational settings for pupils with emotional problems than had the children from either of the other 2 programmes. In a similar but larger-scale study which recently began in Portugal<sup>29</sup>, the children from a Formal Skills programme did not even have an initial advantage over those from High/Scope nurseries, having less self-esteem on arrival at primary school and lower literacy scores at the end of first year. Proponents of High/Scope have pointed out how the daily 'work time' cycle in which children plan an activity, carry it out and then review it (usually in conversation with an adult) helps them to take responsibility<sup>40</sup>, whereas the heavily didactic programmes, often based on language drills, would seem actively to discourage independent thought.

### **3. PRE-SCHOOLING FOR DIFFERENT GROUPS OF CHILDREN**

#### **3.1 The Youngest Children**

At a time when increasing numbers of mothers are returning to employment within weeks or months of giving birth, adequate provision of affordable good quality childcare is clearly essential. This has been shown to be possible in Sweden, whose high quality of childcare is internationally acknowledged, and where in the FAST study children enrolled in the first year of life were found as late as age 13 to have better school grades and more social competence than other adolescents<sup>1</sup>. The situation appears to be very different in parts of the USA, where the average quality of childcare is markedly less, as evidenced by the worryingly high percentage of provision, especially for the youngest children, that has emerged as mediocre or worse in recent surveys of pre-school quality<sup>8</sup>. In a study in Texas<sup>44</sup>, where required standards were described as 'minimal', the children with extensive childcare from infancy had the poorest social skills, work habits and emotional health in the sample as well as the lowest test scores and school grades.

In the most detailed British study published to date<sup>25</sup>, no important adverse effects of early day-care *per se* were found, provided that arrangements were reasonably stable. Although the children in centre-based care (private sector nurseries) lagged somewhat behind the other groups on certain measures of language use, these measures were more closely related to the amount of talk directed to the child than to the category of childcare and so were not an inevitable feature of the nursery provision. As at later ages, it is the quality of early childcare that appears to be crucial for later development.

#### **3.2 Boys and Girls**

Though a number of studies, including a recent one of 4-year-olds in Ireland<sup>15</sup>, have shown girls to have an early lead on cognitive and social measures, relatively few investigations have asked whether there are differential effects of pre-schooling on boys and girls. Boys' subsequent progress may be more sensitive than that of girls to the nature of the pre-schooling. There is some evidence in the Consortium studies that Montessori programmes benefited boys more than did curricula with a highly verbal emphasis<sup>27</sup>, although the latter tended to suit girls well<sup>13 27</sup>.

Long-term academic effects were found to be more pronounced in girls in several of the Consortium studies<sup>7</sup>, the Fuersts' study of the Chicago Child Parent Centre Program<sup>10</sup> and the Rutland Street Project in Dublin<sup>17</sup>. In the Perry Pre-school Program<sup>36</sup> different male/female effects emerged only gradually: the pre-school experience appeared to lead to girls completing high school and otherwise showing more interest in education while the former pre-school boys showed more social responsibility than their controls (less welfare dependency, less crime). These later male/female differences would, however, seem to reflect the different social pressures on male

and female adolescents living in disadvantaged neighbourhoods rather than the direct effects of pre-schooling alone.

### **3.3 Family Background Factors**

Although there is a greater weight of research evidence for the benefits of pre-schooling for disadvantaged children than for children from other socio-economic strata, this is partly because there have been more evaluations of pre-schooling for poor children. Also, applying Melhuish's Figure 2 model, the less intellectually stimulating the home environment, the more scope there is for a developmentally appropriate curriculum to provide new and valuable learning experiences, whether at a nursery centre or in partnership with the mother. There is, however, some evidence – for example in the Head Start Synthesis Study<sup>24</sup> and one of the Consortium studies<sup>4</sup> – that the most disadvantaged families of all may be too dysfunctional and too much concerned with basic survival to help their children to benefit much from pre-school education.

Three studies with evidence that the benefits of early education are not restricted to disadvantaged children are (1) the FAST study in Sweden referred to above, which was based in varying types of neighbourhood<sup>1</sup>; (2) the evaluation of the Dundee Educational Priority Area<sup>14</sup> in which the children were more socially heterogeneous than expected and (3) the CHES study, in which there was little difference in the gains from pre-schooling by children from different social strata<sup>30</sup>. As Figure 3 illustrates, however, large-scale studies exploring differential effects of early childhood education across a range of pre-schools have often revealed a confounding of family background factors and pre-school quality or type, which makes it hard to separate out the effects of social background and pre-school quality on the children's gains. A recent worrying development revealed by US research<sup>31</sup> is that families on modest incomes but above the poverty line may be receiving the worst childcare if they are unable to pay the fees for expensive private nurseries but are ineligible for the best free or heavily subsidised childcare. This particular issue has as yet been little explored in the British Isles.

Children from various types of minority groups – whether disadvantaged or ethnic – have been shown to benefit from being put in touch with the general knowledge which advantaged children in the cultural mainstream learn at home and which may be taken for granted by the primary school<sup>22 17</sup>. Pre-schooling also provides obvious opportunities for children who speak a different language at home to learn more of the language in which they will be educated.

## **4. A PERSPECTIVE ON THE BENEFITS OF PRE-SCHOOL ATTENDANCE**

Perceptions of the particular potential benefits of pre-schooling are inextricably linked to the nature of different programmes and the educational philosophies behind them. Reference has already been made to comparisons of:

- a. heavily didactic, teacher-led programmes which aim to give an early grounding in literacy and numeracy;
- b. 'traditional' nursery programmes with their strong emphasis on fostering social development; and
- c. specialist theory-guided curricula such as the constructivist High/Scope and the other Consortium programmes. (Other types of programme and intermediate forms of the above 3 are, of course, also possible.)

While the weight of research evidence would suggest that there are few long-term benefits from a premature introduction to the formal teaching of literacy and numeracy (although there is scope for debate on what is ‘premature’ and some of the earlier National Curriculum attainment levels can be approached through structured play), this leaves unanswered the question of why the traditional and Consortium programmes should have been more successful.

An argument advanced by, among others, Edward Zigler in the USA<sup>47</sup> and Kathy Sylva in the UK<sup>40</sup> is that such programmes can give children feelings of success and competence in an educational setting, a eagerness to attempt suggested new activities and generally more positive attitudes to learning than they would otherwise have had – especially if from a disadvantaged background. The High/Scope curriculum, for example, can be seen to encourage self-reliance and persistence<sup>40</sup>, as apparently did the nursery settings in the English study by Jowett and Sylva<sup>19</sup>. These positive attitudes can be hypothesized to evoke a favourable response in the primary school teachers which, in turn, reinforces the children’s appropriate classroom behaviour, thus commencing what has been termed a ‘benign spiral’ leading to further enhanced educational achievement.

## **5. THE PROJECT**

The project was undertaken for the former DENI by the Graduate School of Education at Queen’s University, Belfast. The cost was £5,000.

## **6. FULL REPORT**

The full report entitled “From pre-school to school: a review of the research literature” by Anne E Sutherland is available from the Department of Education, price £5<sup>1</sup>.

*This paper is a summary of the research report and as such any views it contains are not necessarily those of the Department of Education.*

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<sup>1</sup> Each educational institution and library is entitled to one free copy.

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