

NO SMALL MATTER

Quality Preschools Benefit Children and Society

An AEU Research Report prepared for the
Australian Education Union by
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Foreword

Preschools Matter

Preschool education in Australia does not get the support it deserves. It is a big issue getting little attention.

International research shows that preschool education is one of the best investments a nation can make...it returns many times over in improved social and educational outcomes. A key finding of the OECD Education Committee is that “the trend in all countries is toward full coverage of the 3 to 6 year old age group, aiming to give all children at least two years of free publicly-funded provision before beginning compulsory schooling...often within the education system.”

Despite this, the structure of provision in Australia is uncoordinated and uneven. Different government departments are responsible, different providers are employed, sometimes public, sometime private and costs differ widely. Participation rates across the states vary too, with about 91% participation on average for at least some time. The AEU estimates that at least 30,000 children miss out completely. There is no national plan or vision for preschools and Australia falls far short of the OECD average and goals.

“No Small Matter” is research undertaken by two AEU Research Officers, Robin Hull from Tasmania and Sally Edsall from NSW. It shows the need for managed change through which the educational and social outcomes for our children can be improved. The preschool members of the AEU are keen to play their part in that process.

The AEU has published other material on preschool education which can be ordered from the AEU. These include “Towards a National Plan for Preschool Education” by Michaela Kronemann and various other materials which can be found on the AEU website at: <http://www.aefederal.org.au/Ec/index2.html>.



Robert Durbridge
Federal Secretary

Executive Summary

Benefits of Quality Preschool Education

Several stages of development converge to make the preschool age an opportune time for intervention. Physically, the young child has matured to the point that he or she has achieved both fine and gross motor coordination and is able to move about easily and freely. Mentally, the child has developed basic language capabilities and can use objects for self-chosen purposes. In the terms of Jean Piaget, the child has shifted from sensory-motor functioning to preoperational capacity. Socially, the child is able to move away from familiar adults and social contexts, into new settings. The fear of strangers, so common earlier, is gone, and the youngster welcomes relations with peers and adults. (*Berrueta-Clement et al 1986*).

When we look at the basic accomplishments of early education, what stands out is that the child develops new capabilities related to emerging social and physical skill, and intellectual thought. Through the acquisition of these capabilities, the child learns to relate to new adults who respond to his or her performance very differently from the family. In short, the child learns to demonstrate new abilities in new settings and to trust new adults and peers enough to engage in these skills willingly. The child's willingness to try new things and develop new capabilities is the seed that is transformed into later school and life success.

The benefits of quality preschool education can be summarised as follows:

- preschool has a positive effect on intellectual and social skills, independent of background, when centres provide quality in terms of physical surroundings and adult/child interactions;
- preschool improves children's ability to think and reason as they enter school, enabling them to learn more in the early grades. Even if the IQ advantage fades (this was not conclusive), their learning accumulates and their success keeps them 'on track' toward high school completion;
- for children from very deprived socioeconomic backgrounds, preschool makes a difference in intellectual progress and the acquisition of positive attitudes and motivation to succeed at school;
- greater social and emotional maturity. Reduction in delinquent behaviours and drug abuse. Fewer anti-social actions and arrests. Those who attended preschool received higher teacher ratings on measures of social and emotional maturity;
- more frequent high school completion and higher future aspirations;
- higher employment rates, better earnings, and correspondingly, a lower incidence of dependence on welfare;

- no clear differences between educational models. The important thing is the conditions - ie physical environment, size of groups, stability of teaching team and quality of interactions between the adult and children;
- high staffing ratios promote teaching and learning behaviour which has an effect on development. They must be accompanied by cooperation between the adults responsible for the educational action;
- group size is important. Several authors regard 20 children as the maximum;
- stability of the educational team appears to be important;
- initial and inservice training of staff, and supervision are important.

While parents' reactions to their children's preschool experience is not a major feature of this report, it is well worth noting that some researchers have compared the attitudes of parents whose children attended quality preschool with those whose children did not. These researchers found that parents of preschool attendees:

- had better attitudes towards their children's schooling;
- had high expectations for their children's learning and greater satisfaction with their children's achievements;
- contacted teachers more often, even though their children had fewer school problems than children who had not been to preschool.

Children's attendance in publicly funded quality preschool programs represents a broad scale change, not a band aid approach. The general theme of the research models is that good preschool experiences can set in motion a chain of events that pervades the child's life through high school and beyond, increasing the quality of life experiences along the way.

Well designed educational programs for young children can clearly affect their lives for the better, both during their school years and beyond. These programs also enhance the development of economically disadvantaged children. Economic analyses indicate that providing such programs is an excellent investment in the future of our society. All that is required is the willingness to take action, as noted by the Consortium of Longitudinal Studies (1983):

'Perhaps if we are sufficiently insistent, our society will one day be willing to make long-range investments in our children and in the quest for ways to improve their ability to succeed in life.'
(p. 466)

Chapter 1:

Recommendations: Strategies to Achieve These Benefits in Australia

1.1 National Plan and Strategy

How can policy makers increase the coherence and effectiveness of the preschool system? In the absence of a unified national policy toward children and families, a patchwork of competing programs and interests have sprung up. These reflect Australia's laudable concern about the well-being of its youngest citizens, but collectively they are a confused array of independent, uncoordinated efforts to address closely related problems. The welter of diverse policy aims, target groups, and service strategies is unacceptably inefficient and wasteful, especially when resources are scarce. As Hill et al (1998) noted, early childhood programs overlap, compete, and leave important needs unaddressed. These researchers found that inconsistencies in programs have a number of costly educational consequences. Discontinuities and inconsistencies of services disrupt the lives of children and parents.

While the Commonwealth Government used to fund preschool education until 1985, it continues to fund all other sectors of education. The Commonwealth must take responsibility for funding preschool education and working with the state/territory governments to develop national goals, frameworks and strategies for preschool education.

Australia needs a national vision and national plan (Kronemann 1999) for publicly funded free preschool education which is an integral part of the public schooling system.

1.2 Preschool to be Publicly Provided and Free

Attendance at preschool is less than 100% in all states and territories. Public funding is crucial to assure that poor children have access to these programs which can put them on a path toward success. Although benefits of preschool programs accrue primarily to low-income children, these children are less likely than children from middle and upper income families to attend such programs because of costs.

Attendance at preschool is expensive in some states. Research shows clearly that this is a deterrent to participation by poor families. Preschool should be free, accessible and available to all children.

1.3 Integrate Preschool into Public Education

Efforts made to increase program continuity also increase program effectiveness. (Hill 1998; Illinois State Board of Education 1985; McKey et al 1985; Irvine 1980; Gray et al 1982). Careful sequencing of materials and activities, based on knowledge of early childhood development, is a key factor in program success.

Investigators have also noted improvements in student outcomes when preschool, kindergarten/preparatory and first grade teachers' work together to insure program continuity from year to year. As Irvine et al (1980) states:

'If there is a concerted effort to build on the preschool experience as the children progress through kindergarten and first grade, the positive effects of preschool can be maintained.' (p. 7)

Preschool needs to be linked to the public education system in each state in order to ensure program continuity .

1.4. Reduce Class Size and Child/Staff Ratios

Most investigators who have examined the discrete effects of different program elements have identified small class size and small student teacher ratios. While different ratios are cited many researchers favoured a 10:1 ratio for 4 year olds. Kronemann (1999) recommends for four year olds that child staff ratios should be no more than 2:20 and group sizes should be a maximum of 20.

1.5 Employ Qualified Early Childhood Teachers and Ensure On-going In-service Education

The general research on the effects of employing qualified early childhood teachers pays off in terms of improved student outcomes. Hill (1998), Berreuta-Cement et al (1985), Irvine (1980) and others have identified benefits when in-service for early childhood teachers focuses directly on early child development, ways to achieve program continuity, and ways to involve and work with parents.

1.6 Ensure Parent Participation in Preschool Education

Virtually all successful programs have parent education and parent involvement components, and nearly all investigators cite these as critical to program success. Cotton and Green's 1988 review of the involvement research revealed the powerful effects of such involvement on children's learning.

The early childhood research underscores the importance of parent participation, including the finding that the more intensively parents are involved, the greater are the cognitive and affective benefits to their children. Early childhood teachers need time built into the school day for parent educational activities such as home visits, support liaison and discussion with parents. This time should be viewed as an essential component of the early childhood teacher's working week.

1.7 Unite Education with Health and Social Services

It is important that health and social services are united with education in a holistic approach. Research by McCain and Mustard (1999), Bronson, et al (1985), the Consortium for Longitudinal Studies (1983), Gray et al (1982) and others have found that health and social services for disadvantaged children and their families are an essential component of successful preschool programs. They remind us that the deficits experienced by these children extend beyond those that can be remediated in the classroom, and that these physical and social needs must be met if educational services are to have significant impact.

Chapter 2:

Purpose and Methodologies

2.1 Purpose of the Study

This publication focuses on the potential of early childhood preschool programs to improve the development and life outcomes of children. This topic was selected by the AEU, firstly, because some policymakers continue to manifest uncertainty about the short-term benefits and long-term impact of preschool programs. Secondly, contemplated changes in funding for such programs offer the opportunity to reconfigure preschool education in Australia for children and families in a manner that allows increased coherence of the current disparate array of educational programs offered and integration into the public education system.

Preschool and child care programs are sometimes grouped together and called “early childhood care and education”, emphasising their overlapping goals and activities. However, a few definitions are in order. Child care programs typically offer care on a full or part day basis to children from birth to school age. Such care may be provided either in a centre or in a caregiver’s home.

Most child care programs seek both to promote child development and to free parents from their child care responsibilities so they can work. In contrast, preschool programs offer an educational program, have been designed to promote child development and improve children’s readiness to succeed in school. Publicly funded preschool programs typically serve children from all backgrounds, while private preschool programs, supported by parent fees, serve children from wealthier backgrounds.

The educational programs provided for children prior to school in Australia are extremely varied. There is confusion about the terms used to describe the preschool year. The starting age varies across Australian states, and significantly, there a range of different providers of services.

In Western Australia, South Australia, Tasmania, Australian Capital Territory, Northern Territory and Queensland, preschool is an integral component of the education system. New South Wales has a complex range of preschool services with the vast majority offered through the community sector. In Victoria, providers are all funded by the Department of Human Services under funding and service agreements.

Kronemann in *Towards a National Plan for Preschool Education* (1998 p. 22-3) makes the point that preschool consolidation of learning and program coherence with the schooling system can best occur when preschool is publicly provided and integrated into the state education system.

2.2 Objectives

The authors have reviewed a number of research studies, model demonstration projects, evaluations and large-scale public programs developed over the past three decades in Australia, Canada, the United States, the United Kingdom and Europe in order to examine the effects of these programs on children from low to middle income families. The review carefully considers issues related to research design and has the following objectives:

- examination in detail of key research in the preschool area to determine the effects and outcomes of quality preschool education;
- identification of the essential elements of high quality preschool programs; and
- assessment of the implications of the research for improving public preschool education policies in Australia.

2.3 Methodological Parameters

A great many educators and researchers view preschool education as beneficial to children's cognitive and social development. These proponents – including all of the researchers and theorists whose work was consulted in order to prepare this document – base their conviction on personal observation and on the many research studies linking preschool programs to desirable outcomes.

Given the array of assertions and reservations about preschool and kindergarten programs, the authors felt it is important to examine what well-designed research studies reveal about the long and short term effects of preschool education.

In reviewing the many research findings cited in this document, it is important to remember that they, for the most part, emerge from studies conducted with children in the three year to five year age group. Hence we are primarily concerned here with research conducted with children three, four, and five years old – the ages which are the focus of most preschool and kindergarten programs. Thus, programs and treatments with infants and toddlers are generally excluded from the analysis unless there are significant longitudinal overlaps with preschool. In addition the focus is on the general area of preschool research. We have not conducted an analysis of the research on special programs for students with disabilities or special needs.

Chapter 3:

Key Research Studies Consulted

Hundreds of studies of varying quality describe the implementation and assess the effects of preschool programs. A relatively small, but important group of studies have focused on long term outcomes and policy change aimed at improving the lives of children and families. Questions about the long term benefits of early childhood programs surfaced first in 1969 in a study which questioned whether children who attended Head Start benefited in a lasting way. Later studies demonstrated benefits on a range of cognitive, educational, social and economic indicators of success in school and life for children who attended model early childhood programs.

The development in Australia of a varied array of preschool programs raises a new set of issues about critical program components to ensure effectiveness, about the capacity of programs to produce desired benefits, and about the lack of coherence among programs that have different objectives but serve the same children and families.

Below is an outline of the major studies consulted in this project.

3.1 McCain, M. and Mustard, J. F. 1999, *Reversing the Real Brain Drain: early years Study Final Report* Children's Secretariat, Government of Ontario, Toronto

One of the most recent studies and reports which is having a direct impact on policy makers and government is the McCain and Mustard Report, 1999.

McCain and Mustard advocate an integrated approach to early child development from pre-natal to 5-6 years, integrating parenting centres, child care and kindergarten (two years prior to school entry from age 4) – utilising existing public facilities, most notably schools. Whilst the study does not separate out the two preschool years of junior and senior kindergarten, the former being comparable to the preschool year and the latter being the same age and stage as the preparatory or reception year in many Australian school systems and prior to entry to year 1, the report does discuss the benefits of kindergarten:

'Kindergarten can be considered as much a part of early child development as part of the education system. Ideally, early child development programs and the school system should be part of a continuum for children that extends from the early years through to adulthood. The brain develops in a seamless manner and what happens in the first years sets the base for base for later learning in the education system.' (p. 18)

Senior Kindergarten (age 5) is accessed by 95% of Ontario children (190 000 children). It must be offered. Junior Kindergarten (age 4) is discretionary for school boards to offer.

Sixty-eight of 72 Ontario school boards offer Junior Kindergarten or an alternative early learning program and this involves 140,000 children. Both senior and junior kindergarten are half day or alternate day programs.

The report goes on to say:

‘Ontario and its communities can and should make better use of existing public resources and facilities, especially schools, for early child development.’ (p. 16)

and

‘Resources for the early years should not be increased at the expense of services that are helping older children and youth overcome disabilities and disadvantage.’ (p. 17)

The report envisions the development of a system of early child development and parenting centres to support children from conception to formal school entry (grade one) and the families of these children. These centres would be linked to the local primary school in concert with other institutions such as libraries and with recreation and cultural activities in their communities.

The report argues that accessibility to age 0-6 facilities should be universal but not mandatory.

The report provides a framework for Early Child Development and Parenting Programs and Early Childhood Development and Parenting Centres.

The conceptual basis for this massive improvement in public policy is based on an examination of evidence from the neurosciences, developmental psychology, social sciences, anthropology, epidemiology and other disciplines about the relationship between early brain development, child development and learning behaviour, and health throughout all stages of life. The development of the brain in the early years of life, particularly the first three years, sets the base of competence and coping skills for the later stages of life. Mustard and McCain state:

‘We provided safe water and immunisation for all children against diseases, then science provided us with the tools we used them to protect individual children and society as a whole. We have new knowledge today and must seize the opportunity to use that knowledge to benefit all children.’ (p. 3)

The National Longitudinal Survey of Children and Youth in Canada (NLSCY), quoted in McCain and Mustard’s report, shows that the proportion of children not doing well on maths and vocabulary tests is higher near the bottom of the socioeconomic scale than it is at the top, but in all socioeconomic groups there are children who do not do well.

This is proportional to where families are on the socioeconomic scale. This means there is no economic cut-off point above which all children do well. If it is desired to decrease the steepness of the socioeconomic gradient, then quality early child development and parenting must apply to all sectors of society.

The NLSCY provides some evidence that a key factor is the quality of parental interaction with children in the early years. This finding emphasises the importance of education and support for parents in early child development initiatives. NLSCY also found that children from families who are low on the socioeconomic scale and who have access to early child development programs outside the family do better than children who do not. This finding is compatible with other studies of early child development over many years.

Parenting was identified as a key factor in early child development for all families at all socioeconomic levels.

3.2 Hill, S. et al, 1998, *100 Children Go to School: Connections and Disconnections in Literacy Development in the Year Prior to School and the First Year of School*, Department of Employment, Education, Training and Youth Affairs, Canberra

This comprehensive three volume study offers valuable insights into literacy learning in the early years of education. The study, funded by the Commonwealth Government, provides a short historical survey of preschool, child care and other prior to school experiences across Australia and maps experiences in the year prior-to-school and the first year of formal schooling. It examines the measurable literacy outcomes for a group of 100 children and provides detailed qualitative case studies of a sample group of twenty children chosen to represent a range of Australian contexts, including family financial resources, home language, ethnicity and geographic location, and focusing on literacy learning in their homes, child care centres, preschools and schools.

The researchers found that young children who attended a quality preschool program attained significantly more preliteracy skills than did comparable children who did not attend such programs. They conclude that the preschool year is critical to children's literacy development and that greater attention needs to be devoted to ensuring that the literacy curriculum from preschool to school is seamless and provides literacy based activities over that period of time. (Volume 1, p. 12)

In order to achieve satisfactory literacy experiences, the preschool teacher must be centrally placed, properly qualified and have access to in-service professional learning which can address the links between cultural and social practices and literacy.

The prior to school provision in Australia is described by the authors as 'the vast patchwork of children's services' (Volume 2 p. 61). It is complex and inconsistent and leads to differences in provision and use. The authors demonstrate that the preschool/school should be bridged and reconceptualised so that preschool can be seen as an interrelated continuum to schooling.

3.3 **European Commission, 1995, *Preschool Education in the European Union: Current Thinking and Provision*, Education, Training and youth Studies No 6, Office for Official Publications of the European Communities, Luxembourg**

The report deals with the role which attendance at institutions with an educational purpose can play in the development of young children and in their subsequent integration into school. The importance of the issue is recognised by the relevant authorities in all the member states of the European Union, and measures aimed at the development of this level of education are being taken by most of them. The report provides a synopsis of the scientific information available at present on the beneficial effects of preschool education. The analysis also deals with the organisational characteristics of those institutions which, according to the results of the research, achieve the most positive results.

Preschool education is defined differently from country to country, but the studies dealt with in the report look at the effects of the educational structures and programs provided for children between the ages of 3 and 6 years. (p. 11)

The European Commission reports that:

In countries with high rates of attendance at preschool education centres, the percentage of mothers who mention the educational value of these facilities is high. Conversely, in countries with low attendance rates at pre-school education centres, mothers who avail themselves of these facilities place greater emphasis on their childcare problems. (p 9)

The report concludes that the effects of preschool leave their mark far beyond the primary school and on different areas of the individual's development, going beyond success at school and touching on aspects of social integration (p. 25).

'It would however be an exaggeration still to say that all is determined by the age of six.'
(p. 10)

The view of preschool as "vaccination" against subsequent education problems is rejected as a great deal of work remains to be done at the primary school level.

The study emphasises the importance of connecting the preschool year with primary and secondary education.

'Good quality pre-school education must be linked to good quality primary and secondary education.' (p. 11)

3.4 The High/Scope Perry Preschool Study

Various researchers and commentators have documented the importance of the Perry Preschool study which examines the lives of 123 black children born between 1958 and 1962. The purpose of the study, which began in 1962, is to explore the long-term effects on these young people of participation versus non-participation in a program of high quality preschool education.

The scientific strength of this study and its ability to determine preschool effects twenty years afterwards is due primarily to an experimental design in which study subjects were randomly assigned to a group that went to preschool or to a group that did not go to preschool. Each year, over a span of five school years (1962-67), children in the wave for that year were assigned to either one of two groups by forming pairs of children with similar pre-test IQs and assigning, at random, each pair member to one of two groups then pairs of similarly ranked children were exchanged between groups to equate within-group ratios of boys and girls and the average socioeconomic levels of the two groups. By flipping a coin, one group was assigned to the preschool condition and the other to the no-preschool condition.

The children lived in a neighbourhood on the south side of Ypsilanti, Michigan, that was the attendance area of the Perry Elementary School. This area was and is an area of low income black families. Children with IQs between 60 and 90, with no evidence of organic handicap, were selected for the study.

The preschool program to which 58 children in the preschool group were assigned was an organised educational program directed at the intellectual and social development of young children.

The program participants were followed annually through age 11, and again at ages 14, 15, 19 and 27, with data collected through interviews, school records, and public record reviews.

The study was well designed to provide information on a broad range of outcomes, including cognitive development, academic achievement of outcomes, work activities, welfare participation, and criminal records. (Berrueta-Clement et al 1986).

The Perry study was cited for its importance by the Australian Senate Committee Report *Childhood Matters: the Report on the Inquiry into Early Childhood Education*, 1996 p. 15.

'The results of the High/Scope Perry Pre-School Study in the US have been particularly striking, showing that high quality early childhood education for young children had significant effects on later performance when measured at ages 14-15, 19 and 27.

By the age of 27, those who had experienced the program had better high school completion rates, higher earnings, and were more likely to own a house. Those not in the program were more likely to have been arrested and to have been dependent on social services.' (p. 15)

3.5 The Carolina Abecedarian Project

McCain and Mustard (1999, pp. 45-46) provide an overview of a study known as the Carolina Abecedarian Project. Campbell and Ramsay (1994) also report extensively about the Abecedarian project.

Entry to the program was determined by sociodemographic factors. The study compared children who were assigned randomly to a preschool experimental group with a control group who did not attend preschool. Within both the preschool and no preschool groups, half also received a school-age intervention program. Thus intervention ranged through eight years for children with both preschool and school programs, five years for those with preschool intervention only, three years for those with school age intervention only, and zero years for those with no intervention. This enabled the researchers to estimate the relative efficacy of the preschool and early elementary school programs alone, as well as the importance of reinforcing preschool gains during the transition to the early years of school. Mean entry age to the centre was 4.4 months. It operated eight hours a day, five days per week, fifty weeks per year. Primary medical care was received on site, and much effort was made to involve families in the preschool program. At school entry level, children being treated also had home school resource teachers.

Ninety-eight percent of participants were African American. Campbell and Ramey say that it is to low-income African Americans that the results should be generalised.

They state:

'The most important policy implication of these findings is that early educational intervention for impoverished children can have long-lasting benefits in terms of improved cognitive performance. This underscores the critical importance of good early environments and suggests the focus of debate should be shifted from whether government should play a role in encouraging good early environments to how these environments can be assured.' (p. 695)

3.6 United Kingdom Child Health and Education Study (CHES)

The CHES was a national longitudinal study of all children in Britain who were born during the week 5-11 April 1970. These children were surveyed at birth, five years and again at ten years.

The study examined the effects of half-day preschool, child care and play groups on children's academic achievement and cognitive development. A total of 13,135 children were traced and interviewed for the five year survey which amounted to 81% of the expected sample. (Osborn and Milbank 1987, p.243-251)

The UK study reported that children who attended any form of organised group preschool program when they were three and four years old showed improved cognitive development and academic achievement compared to children who did not. Disadvantaged children gained slightly more than advantaged children.

The study supports the practice of parent involvement in early child development settings. Children tended to do better when parents (usually mothers) participated in their own child's program, compared with children attending programs whose parents did not participate and to those children who did not attend any program. They had better vocabulary at ages five and ten, and had better interpersonal communication skills.

These findings were independent of the child's socioeconomic status and the type of preschool setting. Children in all socioeconomic groups benefited from participation in preschool programs.

3.7 The Mount Druitt Early Childhood Project

The intention of this project in the Mount Druitt area of Sydney (Braithwaite 1983) was to affect children's development in beneficial ways. Five early childhood projects were implemented within public school settings; that is preschools were attached to existing public primary schools.

Two groups of children were studied: the experimental groups comprising all children enrolled in the five preschool programs and the preschool comparison group, who were children volunteered by their parents for the study who had not attended and were not attending any preschool, day care or family playgroup. There were no significant differences between the mean scores of the preschool and non-preschool groups on entry to preschool except for scores on the auditory perception test (p 197).

The results show that preschool gave considerable advantages to the children enrolled in the five programs on the measures used in the study. In terms of helping children acquire basic concepts, vocabulary, and specific knowledge related to school achievement, enrolment in the programs was beneficial for this group of children. The study also provides evidence that children from disadvantaged socioeconomic backgrounds were, through attendance at preschool, better helped to adapt to the immediate learning environment of school.

3.8 Report of the Beginning School Project

The Beginning School Project (Kronemann, 1999) was an initiative of the AEU Victorian Branch. It was established with the aim of providing useful information about the views of preparatory teachers about the impact of preschool education.

The objectives of the project were to:

- establish a research base regarding the value of participation in a preschool program for children, as observed by primary preparatory teachers.;
- gather data in assessing participation rates of children in preschool programs.

A questionnaire was sent to a representative sample of 354 primary schools, randomly selected in 1999. Responses were received from 128 schools in the sample.

Teachers were asked whether, at the beginning of the year, they were able to identify which children had not attended preschool. Sixty-three percent stated that they were able to do so. The greatest area of perceived difference was in the area of social skills where teachers identified children who had not attended preschool as being below or well below average.

3.9 Project STAR (Student Teacher Achievement Ratio)

Project STAR was a longitudinal, statewide, randomised experiment. By 1998, about 11,600 students had been tracked on STAR's database if they had been assigned at random to one of STAR's three conditions. Those three conditions were a small class (S) of approximately 15 students (a range of 13-17) with one teacher (15:1), a regular class (R) averaging 25 students (range of 22-25) or 25:1, and a regular class with a full-time instructional aide (RA). STAR originally included 79 schools in 46 of Tennessee's 140 school districts.

District leaders agreed to participate in STAR for four years. STAR researchers followed youngsters who entered kindergarten in 1985 (n=6325) until they left in grade three in 1989.

Researchers have conducted the STAR Follow-up studies to determine the long-term (k-12) outcomes of early STAR benefits, such as courses taken in high school, retention, dropout, and student behaviour in and out of school. Using the STAR database, researchers studied the participation in school of kindergarten to year three students in S, R, and RA at various grades. Students in small classes had quantitatively and qualitatively more positive participation than did students in R and RA classes. (Achilles, 1999) Early school participation carries over into early adult participation in society.

3.10 W Steven Barnett 1995 'Long-Term Effects of Early Childhood Programs on Cognitive and School Outcomes' in *The Future of Children: Long-Term Outcomes of Early Childhood Programs* Vol 5, No 3.

This article is a review of 36 studies, examining the long-term effects of these programs on children from low-income families. It includes studies of preschool education, Head Start, child care and home visiting programs.

‘The weight of the evidence establishes that Early Childhood Care and Education can produce large effects on IQ during the early childhood years and sizeable persistent effects on achievement, grade retention, special education, high school graduation, and socialization. In particular, the evidence for effects on grade retention and special education is overwhelming. Evidence is weaker for persistent achievement effects, but this weakness is probably the result of flaws in study design and follow-up procedures. Evidence for effects on high school graduation and delinquency is strong but based on a smaller number of studies.’ (p. 31)

‘These effects are large enough and persistent enough to make a meaningful difference in the lives of children from low-income families: for many children, preschool programs can mean the difference between failing and passing, regular or special education, staying out of trouble or becoming involved in crime and delinquency, dropping out or graduating from high school.’ (p. 31)

In this study, a distinction is made between “model” programs, which are generally of higher quality, and large-scale public programs. The model programs may have more highly qualified staff, closer supervision of staff by experts, lower child-staff ratios, and smaller group size. The advantages were made possible by much higher levels of funding per child than available in typical Head Start and public school programs. (p 25-26)

Chapter 4:

Cognitive Development and Student Achievement

Most of the studies of child-focused programs have examined program effects on children's cognitive development and school achievement.

4.1 Cognitive Outcomes

As with other early interventions of the era, the first outcomes measured by the Perry Study were changes in IQ. At the end of the program intervention, children in the preschool program had IQ scores that exceeded the control group by over 11 points. The favourable IQ effect for program participants began to decline after school entry, disappearing by second grade (age eight). (Berrueta-Clement et al, 1986)

The European Commission (1995) reported:

'Researchers involved in the Consortium for Longitudinal Studies stated that, although participation in a pre-school education programme had a positive influence on the children's intelligence quotients, such influence was short-lived (two or three years). A series of studies evaluating the Head Start programme confirmed this finding.' (p. 13)

'However, the IQ at six years of age is a significant determining factor for future school performance, in terms of avoiding the need for placement in special education...intervention at the pre-school stage can therefore be considered to have an influence on the intellectual skills of the children at a critical period - when they first enter school.' (p 13)

The Carolina Abecedarian project began working with children prior to three years of age and showed that early intervention improved IQ scores. (McCain and Mustard 1999, p. 47)

Campbell and Ramey (1994, p.688) report on Abecedarian that from 18 months and thereafter to eight years, the preschool group displayed a significant advantage in IQ test scores compared to non preschool group children and continued to outperform the non preschoolers in both Reading and Mathematics after three years in school.

The children in the Carolina Abecedarian project were followed up after seven years in public schools – four years after the end of the treatment, 12 years after the project began. In contrast to the report by the Consortium for Longitudinal Studies that early IQ gains eroded within three years of school entry, and academic gains within five to six years, the intellectual and academic gains persisted through seven years in school.

This is one of the broadest and most long-lasting benefits reported to the date of the report (1994) Campbell and Ramey (1994) conclude that the IQ difference is slightly more pronounced at age 12 than at age eight.

Low scores on measures of children's cognitive ability such as school achievement, general intelligence quotient and verbal ability are associated with delinquency. While there is some disagreement, most of the evidence suggests that cognitive deficits lead to antisocial behaviour and not vice versa. For example a longitudinal study of 837 children on the Hawaiian Island of Kauai indicated that age-appropriate language development at two and ten years protected high risk children against later delinquency. Another longitudinal study of 1,037 children from New Zealand indicated that IQ deficits tended to precede the development of serious antisocial behaviour and that the effects of low IQ on behaviour were independent of the effects of factors such as low socioeconomic status, ethnicity, academic attainment and motivation. (Yoshikawa 1985, p 58)

Barnett (1995, p. 28) reported:

'All of the model program studies reported IQ gains at some point during or after children's program participation. In most instances, effects were sustained until school entry at age five. IQ effects persisted the longest (into adolescence) in the two experimental studies that enrolled infants in full-day educational child care programs, (Milwaukee and Abecedarian).'

4.2 Student Achievement

It was found that preschool treatment, but not elementary school treatment, was significantly related to the children's overall IQ. There was a strong trend for children with preschool treatment to be retained in grade less often and to avoid placement in special education.

After the first wave of research which focussed on IQ scores, early childhood specialists began to question the wisdom of using only cognitive measures – and particularly IQ scores – as the indicator of program success. The 1985 Illinois State Board of Education Review states that:

'...growing reservations about the validity and limitations of using IQ as predictor and sole indicator of academic achievement led to the inclusion of scholastic achievement, scholastic placement, noncognitive development, and social responsibility as other indications of effectiveness.' (Cotton and Conklin 1989)

The European Commission (1995) found that the majority of studies refer to the positive role of preschool education in terms of both reducing rates of repeating the year and improving academic skills.

'This effect has been brought about particularly clearly in the case of socially deprived children. It is not, however, a direct effect. It would be wrong simply to consider that the children who have had the benefit of the experience are vaccinated for life against failure at school through some increase in their intellectual aptitudes. It has been established that pre-school education has an influence on these aptitudes in the short term. Other intermediate factors also come into play. This is most obvious in the child's immediate circle.' (p 22)

'Regardless of the child's social background, the length of pre-school education also seems to play a role. The longer the period of attendance at a good quality centre, the better the child's performance. However, it should not be concluded that pre-school education should automatically be extended. Sending a child early to a pre-school centre may be a reflection of the family's aspirations and interest in education, and the family's support for the child's work at school can also influence its educational performance later.' (p.23)

'Any measure to extend the period of pre-school education must therefore have family support for such educational action, and this involves making the service attractive to parents.' (p 23)

Barnett (1995) found that:

'Five of eleven studies with achievement test data found statistically significant positive effects beyond third grade. Evidence of effects was strongest amongst the studies that had used random assignment to form comparison groups. Achievement effects were found through second grade (Milwaukee), fourth grade (Florida), and into junior high school (Abecedarian and Perry)' (p 28) *'The achievement test results of the large scale program studies were quite variable. Four found no effects at any time. Five found initial effects that faded and ceased to be statistically significant by the end of third grade. The others found statistically significant effects in third grade or later, though the patterns of effects over time are variable.'* (p 28)

Barnett:

'Across all studies, the findings were relatively uniform and constitute overwhelming evidence that early childhood care and education can produce sizeable improvements in school success. All but one of the model program studies reported grade retention and special education rates, and in all of these the rates are lower for the program group. The one model program study that did not report rates (Syracuse) simply reported that there was no statistically significant difference. The estimated effects for the model programs are not always statistically significant given the small sample sizes; but in most instances, they are large enough to be of practical importance. Despite small sample sizes, statistical significance on one or the other was found in five model

program studies and another, the Perry Preschool study, found significant effects on the rate for mild mental retardation and for number of years of special education.’ (p 29)
‘Statistically significant effects on grade retention or special education were found in eight of the ten large scale program studies that collected relevant data.’ (p 29)

‘Three model program studies and two large-scale program studies had sufficiently long follow-ups to assess effects on high school graduation rates. All five estimated that early child care and education had a large effect on the graduation rate, though only the three studies with larger sample sizes found the effect to be statistically significant. However, added support is provided by the other studies that find effects on achievement, grade retention, or special education placement - all of which are predictive of high school graduation.’ (p 29)

In New South Wales, Braithwaite (1993) at Mount Druitt found that:

‘There were no significant differences between the mean performances of the preschool and non-preschool groups’. At the end of the preschool year. Neither were there any significant differences between the sexes.’

‘However, tests given to a supplementary group of non-preschool children at the beginning of Kindergarten revealed highly significant differences between the two groups. The group of preschool children performed significantly better than the non-preschool group on all measures’. (p 206)

At the end of the Kindergarten year at school, the group of preschool children in the study performed significantly better on three of the five measures given, but these gains were not sustained to the end of year 1. At the end of year 1, the non-preschool children performed as well as the others on all the measures (p 210). However, it can be concluded that the preschool year helped prepare the children for their first year of school and led to enhanced performance.

Some researchers have found that, like IQ differences, the majority of achievement differences between preschool participants and nonparticipants disappear by the middle primary years.

Osborn and Milbank in the UK CHES study (1987) found that children’s preschool experience was associated with variation in their test performance up to age ten. Children who had no preschool experience or who attended Local Area (LA) day nurseries had lower than average test scores in most of the tests. Children who attended LEA (Local Education Authority) nursery schools or hall playgroups achieved higher than average scores.

Other studies, such as the Perry Preschool Project and the Carolina Abecedarian Project report, that cognitive gains did persist beyond the primary years among the disadvantaged populations with which they were concerned.

The early favourable IQ effects of the Perry study were followed by improved academic achievement even after differences between the groups ceased to be statistically significant. For instance, achievement test scores for program participants remained significantly higher than those for the control group to age 14. Preschool participants had better grades and were more likely to have graduated from high school. Time in special education was significantly lower for program children at ages 19 and 27. (Karloly et al 1998)

In the Carolina Abecedarian study all children who had accessed preschool programs demonstrated better scores on reading and maths at age 15. (Campbell and Ramey 1994)

It is in the noncognitive realm that some researchers believe the greatest benefits of preschool experience occur. Longitudinal studies, some of which have followed preschool graduates all the way into adulthood, have identified many positive and significant relationships between participation and task-related, social, and attitudinal outcomes.

Braithwaite (1983) found that attendance patterns of children who attended preschool compared with those who did not, showed that preschool children had fewer absences from school than non-preschool children in both kindergarten and year 1. The study suggested a clearer picture would be obtained from a longitudinal follow-up (p 240)

In Victoria, Kronemann (1999) found that the proportion of teachers who identified children who had not attended preschool as below or well below average at the beginning of the year, compared to other children in the class was:

- 67% in relation to fine motor skills;
- 66% in relation to cognitive skills;
- 66% in relation to literacy concept skills;
- 65% in relation to communication skills.

Bronson et al (1985) found that attendance at preschool led to better task completion and more cooperative interaction with peers.

4.3 Benefits

In summary, the research consulted in the preparation of this document shows that preschool participants outperform non-participants in the following areas:

- Fewer referrals for remedial classes or special education. Preschool graduates were more likely to remain in regular classes throughout their public school years (Berrueta-Clement, et al 1985; Consortium for Longitudinal Studies 1983; Illinois State Board of Education 1985; Schweinhart 1985.)

- Fewer retentions. Preschool attendees were less likely to repeat grades (Berrueta-Clement, et al 1985; Consortium for Longitudinal Studies 1983; Illinois state Board of Education 1985; Schweinhart 1985.)
- Higher grades. Graduates had fewer failing grades throughout their school years (Berrueta-Clement, et al 1985; Consortium for Longitudinal Studies 1983; Illinois State Board of Education 1985; Schweinhart 1985.)
- More frequent high school completion. (Berrueta-Clement, et al. 1985; Consortium for Longitudinal Studies 1983; Illinois State Board of Education 1985; Schweinhart 1985.)
- Greater academic motivation, on-task behaviour, and capacity for independent work. Preschool participants were rated higher than nonparticipants on these measures (Illinois State Board of Education, Schweinhart 1985; Consortium for Longitudinal Studies; Berrueta-Clement, et al 1985. Osborn and Milbank 1987; Braithwaite 1983; Kronemann 1999 .
- Better attitudes toward school. Preschool attendees had much higher scores on measures of attitude toward school and particular subject areas (Berrueta Clement et al. 1985; Consortium of Longitudinal Studies 1983, Osborn and Milbank 1987, Braithwaite Date1983; Kronemann 1999)

Chapter 5:

Social outcomes

The review of literature from criminology, psychology, and education shows that key early childhood factors exist which are associated with later antisocial or delinquent behaviour and that early childhood programs which seek to ameliorate the effects of those factors can prevent later antisocial or delinquent behaviour.

5.1 Delinquency and Social Responsibility

Researchers have long sought factors that are regularly associated with chronic delinquency. The most important of these factors appear to be low socioeconomic status, having parents who have been convicted of crimes, the child's low cognitive ability (especially poor verbal ability), poor parental child rearing, and the child's own history of antisocial behaviour, conduct disorder, or troublesomeness.

Several research studies, namely the Perry Preschool Project, the Yale Child Welfare Project and the Syracuse University Family Development Research Program (Yoshikawa 1995) demonstrate that there are early risk and protective factors for chronic delinquency. The research strongly suggests that combination early childhood and family support programs can prevent delinquency. Research on possible causal mechanisms for chronic delinquency suggests that providing support for early education, parenting, and verbal ability, as well as ameliorating both family and community level poverty and their correlates, are promising prevention strategies.

The Perry Preschool led study subjects to greater social responsibility. The preschool group had lower crime rates and less delinquent behaviour than the no-preschool group, as indicated by fewer arrests, fewer cases sent on to juvenile court, fewer months on probation, and fewer persons fined as adults. Fewer pregnancies and births through age nineteen were reported by girls in the study's preschool group. (Berrueta-Clement et al, 1986)

In Kronemann's (1999) study the proportion of teachers who identified children who had not attended preschool as below or well below average at the beginning of the year, compared with other children in the class was:

- 75% in relation social skills;
- 72% in relation to maturity and self confidence.

The European Commission found that:

'In terms of motivation, children who attended pre-school provision showed fewer inhibitions than others, on entry to primary school. They were better able to express their need for assistance, recognition and contact. They were also more inclined to act independently.' (p 14)

'For a series of variables, including maturity of moral judgement and motivation, the effects are greater in the case of girls than boys. The author [Beller] attributes this difference to the fact that black American mothers in socially disadvantaged families tend to assume the role of head of family. He also pointed out that these mothers give more support to girls than boys at the pre-school age. Beller concludes that children benefit more from the pre-school experience if they are in a family which supports them and reinforces their motivation.' (p 14)

Rutter et al's study (1998) of youth antisocial behaviour and criminal activity considered the findings from several longitudinal studies. They conclude that repeated youth criminal activity often has its roots in disruptive behaviour in the preschool period. (p. 36)

Early childhood programs that prevent delinquency and crime represent at least two potential sources of savings to society: (1) reductions in crime and in justice system costs, and (2) gains in work force participation when youths who are less delinquent than their peers participate more in the legitimate economy. (Yoshikawa 1995)

5.2 Benefits

In summary preschool participants outshine non-participants in the following areas:

- Greater social and emotional maturity. Those who attended preschool received higher teacher ratings on measures of social and emotional maturity. (Berrueta Clement et al 1985; Illinois state Board of Education 1985; Kronemann 1999; Braithwaite 1983)
- Lower incidence of absenteeism/detentions. (Illinois State Board of Education 1985)
- Better self-esteem, greater internal locus of control. Those who attended preschool had higher scores on self-esteem and locus of control measures than those who did not attend preschool. (Berrueta Clement et al 1985; Consortium for Longitudinal Studies; Illinois State Board of Education 1985)
- Lower incidence of illegitimate pregnancy, drug abuse, and delinquent acts. Older students who had attended preschool as small children had lower incidences of these behaviours, according to self reports. (Consortium for Longitudinal Studies 1983; Berrueta Clement 1985; Schweinhart 1985)
- Fewer arrests and antisocial acts (Berrueta Clement et al 1985; Consortium for Longitudinal Studies 1983)

Chapter 6:

Economic self sufficiency and benefits to Government

By age 27, Perry Preschool program participants had significantly lower rates of current and past welfare utilisation (ie. AFDC - Aid to Families with Dependent Children, Food Stamps, general assistance, and so on). Lifetime criminal activity – both incidence and severity – was also significantly lower. Employment rates and earnings for program participants were correspondingly higher, although the employment rate difference was statistically significant at age 19 but not at age 27. (Karoly et al 1998)

The economic rationale for government programs for low-income families has been described as governmental investment in human capital for those families with fewer resources available to invest in their children. (Yoshikawa 1995)

6.1 Perry Preschool Program Cost Benefit Analysis

Table 1 Costs and Savings: Perry Preschool (US Dollars per child)

	Due to mother	Due to child	Total	Standard Error
Program cost			12148	
Saving to government	-	25437	25437	5789
Reduction in education services	-	6365	6365	51
Taxes from increased employment	-	6566	6566	3319
Reduction in welfare cost	-	2310	2310	4422
Reduction in criminal justice cost	-	10195	10195	1713
Net Savings	-		13289	

Source: Karoly et al 1998

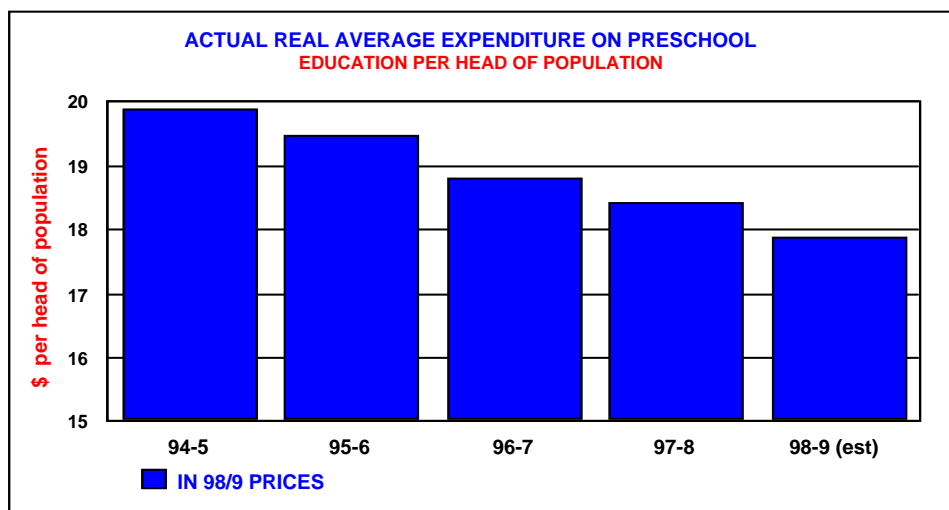
Notes: Savings due to the mother have not been measured. All amounts are in 1996 US dollars and are the net value of amounts over time.

The above table summarises costs and savings to government over the child's life from preschool to age 27 years as a result of participation in the Perry Preschool program.

Table 1 shows how the savings to government are distributed among the four savings categories. Forty percent of the savings to government are from reductions in criminal justice system costs, because children who completed the Perry Preschool program commit less crime as they transit through adolescence to adulthood. Greater tax revenues as a result of greater employment and income over the lifetime of the child account for 26% of the savings. Lower use of education services – such as special education participation – accounts for another 25% of the savings. Reduction in the child's lifetime usage of welfare accounts for the remaining 9% of the savings to government.

To the extent that the cost benefit analysis does not measure the savings to the child’s mother, the calculated net saving is an underestimate of the true savings to government that can be credited to this program. Interestingly, the Carolina Abecedarian Study found that mothers in the Intervention program were better educated and less likely to be unemployed at the end of the project.

Table 2 Australian Investment in Preschool Education is Falling



Source: Commonwealth Grants Commission 2000 Update Government final consumption expenditure CPI (ABS 1350.0)

Table 2 shows that Australian states and territories have been reducing funding towards preschool education. While the data for 1998/9 are estimates, based on calculating a growth factor as the average of each of the previous three years annual growth. Commonwealth Grants Commission estimates show a fall of about 10.1% in real terms in preschool funding per head of population.

Many nations have implemented far broader and more comprehensive preschool systems based on research and built on the strength of commonly held values about children and families. The early childhood years do indeed provide a moment when the door opens and future seems within reach. The current array of uncoordinated and inadequately funded preschool programs in Australia are squandering a precious opportunity.

Costs to government of providing quality early childhood programs must be balanced against the value to society of increased productivity and decreased social problems.

Once out of school, young people who had attended preschool continued to make a better showing in life than those who had not. They were found to have:

- Higher employment rates and better earnings and, correspondingly, a lower incidence of dependence on welfare (Berrueta Clement et al 1985; Consortium for Longitudinal Studies 1983; Illinois State Board of Education 1985; Schweinhart 1985)

Chapter 7:

Equity

Evidence from several evaluations has demonstrated that the Perry Preschool Program has had both a short and long term positive effect on low-income subjects. This is not to say that a preschool program by itself can eliminate the effects of poverty. The Perry program experience permanently altered the success/failure trajectory of a person's life in significant and very positive ways.

7.1 Addressing Disadvantage

In Osborn and Milbank's Child Health and Education Study (1987) the advantages of attending preschool were marginally higher for socially disadvantaged children. However, there were important differences in the type of service provided. Osborn and Milbank found inequalities in the use of the different services. Children and families with the greatest need of support from outside the family were those who had the least chance of obtaining it. The majority of children from socially disadvantaged backgrounds attended local nurseries where the staff had to cater for larger numbers of children and with inadequate resources.

Several American studies from the 1970s looked at the compensatory education movement. All those studies have been compiled and covered in the Consortium for Longitudinal Studies. Analysis of these show that preschool education programs have a perceptible effect. The intervention reduced the number of pupils who had to be placed in special schools and lowered the rates of those who had to repeat the year. On the basis of these data, Lazar concluded that:

'early education programs can in some way improve the ability of low-income children to meet the requirements of their school'. (1977, p. 28)

The European Commission quoting the work of Schweinhart and Weikart, the authors of the Perry Longitudinal Study, spoke about the synergistic effect of preschool for disadvantaged children.

'Disadvantaged children who have benefited from pre-school education enter primary school with a better aptitude for education. They thereby impress their teachers who develop much more positive expectations of them than their disadvantaged classmates who have not had the benefit of pre-school education. Children can sense the fact that adults expect a lot of them, and they direct their energy at trying to confirm the positive expectations of which they are the object. In short, pupils from ethnic minority backgrounds who begin primary education with more finely tuned cognitive skills will, by this very fact, turn in a positive direction the series of interactions to which they are subject. Sensitive to the positive image which teachers have formed of them, they will adopt the attitude and the role of the good pupil.'

The positive image which the teacher has of these pupils will also influence their parents and, naturally, the expectations of the parents for their children.’ (pp. 10-11)

In concluding remarks on reporting on the Carolina Abecedarian project, Campbell and Ramey (1994) state:

‘Certainly providing 5-8 years of intervention was costly, but so is lifelong loss of productivity associated with academic failure and hopelessness. The present results imply that treatment during the preschool years was most beneficial. Societal trends are clearly towards more, not less, out-of-home-care for the very young. Nothing was done in the Abecedarian program that could not be done in other preschool centres or school systems. If we are to provide truly fair opportunities for children born into poverty, we must see to it that adequate resources exist to support them and enhance their cognitive growth. Better early environments can improve the chances that poor children will acquire the preparation they need for academic success.’ (p. 695-6)

McCain and Mustard (1999) caution against only directing quality preschool programs towards children from disadvantaged backgrounds and warn:

‘Targeted programs that reach only children at risk in the lower socioeconomic group will miss a very large number of children and families in need of support in the middle and upper socioeconomic sectors of society.’ (p. 11)

Chapter 8:

Parent Involvement

Osborn and Milbank (1987) found that children whose mothers helped in some way at the preschool institution had better vocabulary at ages five and ten, were better at reading and mathematics at ten and were assessed by their teachers as having better communication skills, when compared with children whose mothers did not help. These results were independent of the type of preschool institution attended, the child's own social and family circumstances, and parental interest in the child's education. Parental involvement was also found to be a contributory factor in the higher test scores of children who attended hall playgroups which were the type of institution in which such involvement was most often found. These findings clearly support the principle of parental involvement in preschool educational settings.

The European Commission (1995) found that various studies reinforce the view that parent involvement plays a significant role in preschool intervention.

Lazar and Darlington (1979) conclude that actions involving parents bring about change in the family environment and increase the aspirations both of the parents for their children and of the children themselves.

'the effects of pre-school action on children's schooling may be an indirect result of an increase in the parents' awareness and skills in relation to the education system.' (p 14)

Bronfenbrenner (1974) advances the thesis that:

'pre-school education plays a role in the child's development only if the family micro-system is influenced. It is as though the child was incapable, on its own, of assimilating the motivation and aspirations which are conducive to its development, these elements having to be assimilated by the parents and passed on to the child.' (p 15)

Gray (1974) confirms the importance of:

'pre-school education for the child's immediate circle and younger siblings of children who had been targeted by the action obtained better results in IQ tests than the siblings of children who had not had the advantage of such intervention. It would appear that the parents had remembered and continued to apply to their younger children some of what they had learned in the course of the action (aspirations, awareness of the role of education etc.)' (p 14)

Some researchers have compared the attitudes of parents whose children attended preschool with those whose children did not.

These researchers found that parents of preschool participants:

- had better attitudes towards their children's schooling (Illinois State Board of Education 1985);
- had higher expectations for their children's learning and greater satisfaction with their children's achievements. (Consortium for Longitudinal Studies 1983).

High quality preschool programs with long term effects empower parents by involving them as partners with teachers in supporting their children's development. Most of the programs found to have long term benefits included weekly home visits or emphasised parent involvement in other ways. The programs strengthened parents' ability to view their children as able, active learners and to support their children's development of a sense of control and of intellectual, social, and physical abilities.

Chapter 9:

Program Quality

All researchers agree that high quality services are necessary to generate the long term benefits associated with the most successful preschool programs. Despite the difficulty in determining program quality, three key variables have consistently been highlighted in the research literature: (1) a high staff/child ratio, (2) small group size, and (3) staff qualifications coupled with on-going inservice training and professional learning (Achilles, 1999; Barnett 1995; Campbell and Ramey 1994; European Commission 1995; Frede 1995; Hill et al 1998; McCain and Mustard 1999; Schweinhart et al 1993; Yoshikawa 1995). These program components have a major cost impact, and they also come under the direct control of state and territory governments.

The European Commission (1995) found that studies:

‘confirm the beneficial effect of pre-school education on socially deprived children, whatever the program was followed. The conditions of operation appear much more important than the characteristics of the program. For Weikert et al (1978) the principal question of pre-school education is therefore not so much to determine which programme to use as to know how to manage it in order to obtain positive results’. (p. 32)

McCain and Mustard (1999) found that their research indicated that full-time attendance in poor quality preschool child care programs had a negative impact on children’s social and language development.

9.1 Staff/Child Ratios and Class Sizes

Early childhood is the critical period in social development. Evidence has been accumulating for more than 25 years – primarily in the United States and Canada – that unless children achieve minimal social competence by about the age of six, plus or minus half a year, the child is at risk for the rest of his/her life. (Katz 1997) We also know a lot more about how to help children in a negative cycle. We also know that help has to be offered early, and that teachers cannot help them unless the teacher/child ratio is low enough to permit frequent individualised interaction between children and adults, and close monitoring of social engagement in the classroom.

The European Commission (1995) also examined child/staff ratios:

‘In Sweden, Palmerus (1991) examined the extent to which variations in the content and types of activities and social interaction within the educational team are linked to staffing ratios. In Sweden, the ideal ratio is 15 children to 3 adults, but the author recorded a number of situations in which the number of children per adult was higher by four.’ (p 27)

'The more staff are responsible for the children, the more the proportion of educational activities increases, with a reduction in the extent of pure child minding.' (p 27)

The Oxford Preschool Research Project (Bruner 1980) also examined staffing ratios. The lower the ratio, the greater was the proportion of time spent in elaborate play activities and the more discussions there were between the children and the adults. The overall size of the group also influenced the activities observed. Bruner makes a distinction between groups with less than 26 children, and those with more. The most notable difference found was in the proportion of elaborate play with structured material, art workshops and small-scale constructions), with 70% in the smaller groups as against 50% in the larger ones.

The Abecedarian project in North Carolina, began weeks after birth and was full day year-round centre-based intervention. With the infants/toddlers (0-3 yrs) there was a child/teacher ratio of 3:1 and in the 3-6 year age group a child/teacher ratio of 6:1. Parents were involved and engaged and asked to provide supplemental educational activities. Home visits took place about 15 times per year.

9.1.1 Staffing Of the Perry Preschool Program

- Each year the program was staffed by teaching teams of four teachers who received extensive managerial supervision and training.
- The staff child ratio was one adult for every five or six children enrolled.
- Classes were conducted for 2.5 hours each morning, Monday through Friday.
- Children participated in the program for two school years at ages three and four, except in the case of the Wave Zero preschool group that received the program for one school year at age four.
- Teachers made a home visit to each mother and child for 1.5 hours weekly.

9.1.2 Project STAR

The findings from Project STAR demonstrate that class size in the early years of education is an important variable in student outcomes, teacher benefits, and student well-being.

Key findings are summarised below:

- Students in small classes (S - average 15) outperform students in regular classes R – average 25) and regular classes with an aide (RA – average 25) on all cognitive measures and the treatment lasts at least into grade eight.
- Students in S have relatively fewer examples of poor discipline.
- The S classes seem to reduce the known deleterious effects of big schools.
- Teachers have more on-task time in S and this stays constant all year, but in R the behaviours decline over the year.

- Students in S are more engaged and participative in school than are students in R and RA. This may influence staying in school to graduation.
- There are relatively fewer retentions in grade in S.
- The traditional test score gap between white and non-white students does not open as much in S as in R and RA.
- Early identification of special needs in S seems to reduce later special education placements.
- Student scores in S are up in all tested areas, not just in targeted areas, usually reading and maths.

(Achilles 1999, p. 28)

The small class size treatment is thus more preventative than remedial. If a student does not experience small classes when first entering the education system, there may be little gain without one on one tutoring or other expensive ‘treatments’. This finding indicates that class size initiatives should begin in preschool and move ahead one grade at a time.

The ratio of children to staff influence whether the program has a positive effect on the children. Of particular concern is the staff/child ratio in preschool classrooms in Australia. The staff/child ratio jumps considerably when the child moves from child care to preschool. Even when preschool child/staff ratios are regulated in Australian states and territories it is of great concern that there are no national standards for child/staff ratios and group size. In 1984 the Commonwealth Schools Commission recommended class sizes of 15 children for kindergarten.

Kronemann (1998, p. 36) recommends:

That as a matter of urgency a minimum national standard be set to establish staff student ratios of 2:20 for all preschool education programs for 4 year old children, including at least one qualified early childhood teacher.

and

That where the minimum staff ratio comprises one qualified early childhood teacher and one assistant, group sizes for 4 year olds programs be restricted to a maximum of 20.

9.2 Staff Qualifications and Training

The idea that young children initiate their own learning activities rather than act as mere passive recipients of information from others is central to developmentally appropriate practice for young children. Such active learning encourages children to solve their everyday intellectual, social, and physical problems and to assume a measure of control over their environment.

Such high quality preschool programs empower teachers by providing them with inservice curriculum training and supportive curriculum supervision, which helps them to engage in practices that support children and parents. Such training is most successful in promoting quality when agencies have supportive administrations and trained curriculum specialists on staff who provide teachers with hands-on workshops, observation and feedback, and follow-up sessions (Epstein, 1993).

9.3 Curriculum

The matter of the relative merits of different program models is probably the most controversial issue in the early childhood education field. Considerable research effort has been put forth to determine whether young children benefit more from programmed learning programs (such as Distar), open framework programs (such as High/Scope), child centred programs or some other program model.

Some researchers have compared different preschool program approaches and found one or another of them to be superior to others. For example, Huston-Stein, et al (1977) found less structured programs with more child selected activities to be more beneficial than other approaches in fostering imagination, task persistence, and independence. Other investigators have found, not surprisingly, that more didactic, academically oriented programs produce greater short term cognitive gains than other models (Schweinhart, et al. 1986; Gersten 1986; Huston-Stein et al 1977). On the other hand Schweinhart, et al. (1986) found that teenagers who had participated in didactic programs as small children engaged in far more negative social behaviour when they grew older.

While these findings need to be considered, a more frequently drawn conclusion of the comparative research is that all of these approaches can be effective if they include the previously cited elements – small classes and child/staff ratios; qualified teachers who participate in on-going training; and parent involvement – which seem critical to program success.

According to Cotton and Conklin (1989):

‘...most investigators have determined that the major preschool curriculum models can all confer cognitive and non-cognitive benefits if they provide in service for teachers and aides, involve parents, keep to small class size, and maintain program continuity.’ (p. 8)

Cotton and Conklin (1989) found after reviewing twenty-eight research documents that effective practices for preschool programs are congruent with those effective schooling research findings that have relevance for young children.

The following are critical components:

- matching instructional resources and teaching activities to the developmental and cultural understandings of the children;
- holding high expectations for all children and taking steps to insure that they will be prepared for success at their next level of education;
- making sure that activities flow from previous activity and learning and into future ones; explaining these connections to the children as part of the activity;
- previewing lessons, giving clear directions, and checking student understanding;
- allowing children plenty of opportunity for guided and independent practice with new concepts and skills;
- monitoring student activities and providing help as needed;
- communicating warmth and caring to children;
- building good continuity across grade levels and making sure teachers know where their curriculum fits into the overall school curriculum;
- allocating and making use of time in ways that meet program goals;
- providing staff development opportunities;
- engaging the involvement of parents, providing them an array of involvement opportunities, and building teachers' capacity to work effectively with parents.

Frede (1995) concludes that the curriculum used in the most effective programs engages children as active learners and dovetails with what they are likely to encounter when they enter school.

9.4 Service Intensity

Barnett (1995), Yoshikawa (1995) and Frede (1995) agree that there is little evidence indicating the ideal intensity of early childhood programs. Long-term benefits for children have been generated by programs that serve children in preschool settings on half day or full day schedules, some including home visits on a weekly or monthly schedule.

Because different service intensity levels have seldom been examined in the context of a single program, it is difficult to derive specific prescriptions about these factors from available research, although many researchers believe that a minimum threshold of program intensity is probably necessary to yield benefits. Kronemann (1999) recommended that initially at least ten hours per week be seen as the minimum provision in Australian preschools and that state and territory governments should work towards providing this. She also recommended that determining optimum levels of services is a critical need for future planning.

9.5 Conclusions

This review of the literature is essentially a review of a research success story: research should facilitate action; and in the field of preschool programs, state and federal governments are not currently investing as much financially as they used to and problems in quality and unevenness in coverage limit the positive benefits that may be obtained.

A report of the US National Conference of State Legislatures asserted:

'The good news is that there now exists a significant research foundation to inform state policy development. Today, law makers know with great confidence not just that quality programs work, but also what makes them work...' (p. 2)

A school superintendent quoted in another report (Karweit 1994) said:

'The effect of early intervention on school success is well documented. I believe that early intervention therapy, language stimulation and rich experiences at ages three and four will do more to increase the achievement of at-risk children and to reduce dropouts than any amount of money spent on grades seven through twelve.' (p. 58)

Persuaded by the evidence of the effectiveness of early childhood programs generally, this American superintendent stepped beyond the existing research in concluding that investments in early childhood education greatly enhance children's life opportunities.

It is important to recognise, too, that it is not always research that drives policy. Just as often, it is societal values that drive policy. Many nations have implemented far broader and more comprehensive early childhood systems based on far less research than exists in Australia, usually building upon the strength of commonly held values about children and families.

The preschool years do indeed provide a moment when a door opens, and the future seems within reach. The current array of uncoordinated early childhood policies and inadequately funded programs are squandering a precious opportunity. With hope and resolve, preschool programs and policies can be united to provide a brighter future for Australia's children.

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