

## **Submission on Draft report on ‘Early childhood education and care’**

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February 2024

The main contention of my submission is that the Final report should give much greater attention to the role for centre-based programs targeted at children who are exposed to significant family stress and social disadvantage, including being at risk of or experiencing extreme adversity (hereafter referred to as ‘targeted programs’).

The ways in which I believe that this greater attention should be introduced into the Final report are to:

- Recognise the international and Australian evidence which finds that targeted programs can generate large positive impacts for children experiencing extreme adversity and large benefit-cost outcomes for society;
- Recognise that targeted programs therefore are likely to be an essential element of a universal ECEC system in Australia that seeks to maximise benefits to children and to achieve the highest possible benefit-cost outcome for society;
- Make recommendations about the future path for research on the design and implementation of targeted programs in Australia (building on, for example, the current replication trial of the Early Years Education Program (EYEP) being undertaken by the Parkville Institute); and
- Make recommendations on how, should research on targeted programs (currently underway and undertaken in the future) continue to find large positive impacts for children, those programs can be best incorporated into a universal ECEC system in Australia. This would include aspects such as: responsibilities by level of government; method(s) of funding; governance of curriculum and workforce issues; eligibility criteria; extent of provision of services to parents/primary caregivers.

In support of my contention, below I present:

- 1] A brief summary of evidence on the impact of targeted programs; and
- 2] Reasons why I don’t believe that the arguments made in the Draft report against targeted programs are sufficient justification for the limited attention they receive.

Before doing that, it is important to make two general points about terminology.

### *Meaning of targeted*

The term targeted is used in the literature to describe very different approaches to ECEC policy. It is important to emphasise what I have said above, that the sense in which I am using the term in this submission is with regard to programs focused on children who experience significant family stress or social disadvantage.

### *Meaning of universal*

Consistent with the Draft report, I interpret universal to mean that there is a general category of program or service which is intended for a whole population, but that the service or program need not be the same for all participants. [See, for example, page 4 of the Draft report: 'Universal...does not mean uniform.'] Interpreted in this way, the idea of universality and targeted programs are not mutually exclusive. It is possible to have a specific ECEC program targeted for a highly disadvantaged group in the population, at the same time as the whole population is intended to participate in ECEC.

## **1] Evidence in support of targeted programs**

Evidence on ECEC programs targeted at children living in extreme adversity is of three main types:

- Evidence from early US demonstration trials (primarily Abecedarian and Perry Preschool);
- Evidence from the Australian Early Years Education (EYEP) trial; and
- Evidence from later US trials.

A summary of the main details of the US demonstration programs and EYEP is presented in Table 1.

### *a] Early US demonstration trials*

These programs have been found to have large positive impacts on child development, and very large benefit-cost ratios and social returns.

A recent major review of evidence on ECEC programs (Duncan et al., 2022, p.53) concludes that: 'Perry and Abecedarian seem to show most clearly that high quality (and high-cost) programs designed and run by researchers, and in the context of low quality counterfactual conditions, can transform the lives of many of the enrolled children. They improve some combination of cognitive and noncognitive skills across childhood and adolescence, and even well into adulthood. Their costs may be high, but the value of the benefits they yield, specifically increased labor-market productivity and reduced crime, far exceeds those costs.'

Other overviews of the early US demonstration programs reach the same conclusion; for example, Cannon et al. (2015). Heckman et al. (2010, 2013) (Perry Preschool); and Garcia et al. (2017) (Abecedarian) are important re-evaluations of those programs. Further recent research (Dougan et al., 2023) has examined a scaled-up version of Abecedarian and Perry Preschool, the Infant Health and Development Program (IHDP), which commenced in mid-1980s. The main findings is that the IHDP generated gains in short-term cognition and age-18 noncognitive skills that are comparable to the Perry Preschool program. This study is important for (at least partially) addressing the issue of the relevance of the Abecedarian and Perry Preschool programs, which is sometimes questioned due to them involving small numbers of children (for example, Duncan and Magnuson, 2013, p.123).

#### *b] EYEP trial*

The EYEP trial is the main source of evidence on the impact of a targeted ECEC program in Australia. Evaluation of the impact of the program after children had participated for 36 months found (Tseng et al., 2019): i] Large impacts on children's cognitive development, via both IQ and language skills. Children's IQ and language development were sufficiently improved that the EYEP's objective to make participants developmentally equal to their peers is achieved; and ii] A large impact on children's social and emotional development, and a small average impact on resilience, albeit with a relatively high degree of variability across children.

#### *c] Later US trials*

The main later evidence is from trials of the Head Start program, which began to be implemented in mid-1960s, and analysis of which has continued through to the present. The general conclusion from studies of Head Start is that the program in its first two decades of operation had relatively large positive impacts on child development, but that in later decades its impact is smaller (for example, Duncan et al., 2022, p.52).

In considering Head Start, it is important to take into account that its eligibility conditions allow participation by a broader population group than EYEP or the US demonstration trials. Participation in Head Start is mainly based on family income, specifically for families with income below poverty guidelines (US Department of Health and Human Services, 2023). This contrasts with EYEP, Abecedarian and Perry Preschool, all of which had eligibility criteria specifically relating to risks to child development.

A reasonable assumption is that the return to intensive ECEC programs will increase with the level of adversity being experienced by a child. It then follows that programs with narrower eligibility conditions, focused on children experiencing the most extreme family stress and social disadvantage, will have a larger average impact, compared to programs

with broader eligibility criteria. That is, programs such as EYEP or Perry Preschool are predicted to have a larger average impact than a program such as Head Start; as indeed is found from empirical studies (Duncan et al., 2022, pp.52-53).

The Head Start intervention is also of lower intensity than EYEP or the US demonstration trials. It is of interest to note, therefore, that a recent trial of a high-intensity program, CogX, in a disadvantaged Chicago neighbourhood, has been found to have a large impact on cognitive and social development of children (Fryer et al., 2020).

Also relevant to consideration of targeted programs is that it is often concluded that a reason for the decreasing impact of Head Start is an improvement in the general quality of ECEC programs (Duncan et al., 2022, p.31). That is, the impact of any program, such as Head Start, is always a comparison of outcomes for children who participate in the program compared to a sample of similar children who do not participate. If more of the control group of children are able to participate in some type of ECEC, and/or if the quality of that ECEC has improved over time, this can explain why Head Start is found to have a diminishing impact.

Potential gains from a targeted program therefore always need to be judged relative to the scope for participation in and quality of mainstream programs. Findings from the EYEP study suggest that, at least at present, difficulties for participation by children living in families with significant stress and social disadvantage, and quality of mainstream programs, are such as to mean that a targeted program can provide a substantial positive impact.

## **2] Arguments against targeted programs presented in the Draft report**

Here, I reproduce and present commentary on the main arguments presented against targeted programs in the Draft Report (pages 117-18).

- ‘But universal preschool programs in the United States seem to be much more beneficial than targeted programs, a finding that cannot be clearly explained by any other observed features of these programs (Cascio 2023).’

It is critical to note that Cascio (2023) uses the term targeted to refer to the Head Start program in the United States. The finding from Cascio’s study, that the Head Start program had relatively small effects on child development, is consistent with the findings from other studies of the recent impact of the program, as described above. Duncan et al. (2022, p.52) conclude in their review that: ‘...recent program evaluations like the Head Start Impact Study have shown modest initial effects that quickly faded out.’

But as has also been described above, the Head Start program allows participation by a broader group of disadvantaged participants than EYEP or the early US demonstration programs, and is also lower intensity than those programs. Hence, a study that finds small impacts of a program such as Head Start is not relevant for assessing how a program in Australia targeted at children experiencing extreme adversity will affect the development of those children.

- ‘As discussed earlier, many ECEC programs have been found to benefit children across the spectrum of SES.’

It’s correct that ‘many ECEC programs have been found to benefit children across the spectrum of SES’. Of course, a reading of the evidence also reveals that many ECEC programs have been found not to benefit children across the spectrum of SES. The major review by van Huizen and Platenga (2018, p.206), for example, concludes that: ‘...the gains of ECEC are concentrated within children from lower socioeconomic families.’ But in any case, whether ECEC programs do or don’t have an impact on children across the board is not relevant to the main question of interest about programs targeted at children experiencing extreme adversity. The main question at issue is which type of program – targeted or otherwise - has the largest positive impact (or benefit-cost) for children experiencing extreme adversity.

- ‘And children from any family background, who live in any area can be developmentally vulnerable (SA Government 2023) – some of the children who may have most to gain from ECEC might not be eligible for targeted programs.’

Targeted programs do, by definition, involve conditions for eligibility. And it is unlikely those conditions will ever perfectly sort children according to benefit-cost of the program. That is, there may be some children for whom there would be a positive benefit-cost to society from participation who miss out; or some children who participate for whom there is a negative benefit-cost. But that is a reason for trying to find better ways to establish eligibility so that participation occurs for all children for whom the targeted program will generate positive benefit-cost to society. It is not a reason not to have targeted programs, which would involve losing all the gains to society from participation for the children for whom eligibility has been correctly determined.

- ‘Children experiencing disadvantage can sometimes be more likely to attend ECEC when programs are not targeted towards them, potentially because the basis for targeting (such as a low family income) can change quickly, stigma from targeted programs is avoided, it is less administratively burdensome to gain access, or because universal programs can establish norms of participation.’

These arguments are fine in theory, but based on my experience from the EYEP trial, their practical relevance is limited.

a) On the basis for participation changing quickly: Criteria for participation in a program targeted at children experiencing significant family stress and social disadvantage will be much broader and permanent than income. This by itself should mean less likelihood of changing eligibility. But in any case, in the interests of a vulnerable population of children, a best-practice program is likely to have a contract with families that guarantees participation for a specified time.

b) On stigma: The Draft report itself (p.148) provides a substantial commentary on the problems of exclusion and remaining connected to ECEC for children experiencing extreme adversity. The potential for stigma effects in ECEC seems most likely to arise from interactions between parents and between children attending the same ECEC centre; and not from external attitudes towards children who attend some particular ECEC centre. It is much easier therefore to imagine stigma effects towards families experiencing extreme adversity coming from trying to attend mainstream ECEC, than to imagine stigma effects associated with attending targeted programs.

c) On norms of participation: The experience of the EYEP trial was that it took a huge amount of effort with the families and children, and expertise on the part of educators and other staff, to establish a pattern of regular participation. Arguably therefore, attendance is much more likely to occur in targeted programs, which have the resources and staff with skills to generate engagement with families under significant stress (such as by having a consistently welcoming environment at the centre, following up on absences and encouraging continued attendance).

• Given the importance of peer effects for learning, children's development may be best promoted in environments with a broader mix of social backgrounds, rather than one where children experiencing disadvantage are concentrated in the same settings.'

For peer learning effects to occur, interaction is required. Differences in social backgrounds, which limit interaction (due for example to stigma effects), may therefore, and especially with children experiencing extreme adversity, stymie peer learning. It also seems wrong to assume that children participating in targeted programs cannot gain via peer learning effects from each other, or would only achieve gains from such effects in an environment with a broader mix of social backgrounds.

Nevertheless, experiencing other people from a broad mix of social backgrounds is an important part of the education process. A critical question, however, is at what stage that should occur. In this respect, it's important to recognise that the choice between targeted and mainstream programs for children experiencing extreme adversity is not a 'forever'

decision. A general principle might be for any targeted program to be designed to allow an accelerated period of development in order for integration into mainstream education for children to happen as quickly as possible; but with the rationale for the targeted program being that acceleration can best be achieved in such a program. Consistent with this principle, the ultimate objective of the EYEP program is, for example, stated as (Tseng et al., 2019): ‘... to ensure that at-risk and vulnerable children realise their full potential and transition into school as confident, capable learners, developmentally and educationally equal to their peers.’

- ‘Broad-based community involvement may lead to a greater sustainability and quality of programs, as more – and more politically connected – families have an incentive to advocate for their effective operation. However, some evidence has suggested that any effect of this may be minimal.’

This may be the case. However, it seems to argue for a method of funding for targeted programs that ensures adequate resourcing, rather than not having that type of program.

## References

- Cannon, Jill S., M. Rebecca Kilburn, Lyn A. Karoly, Teryn Mattox, Ashley N. Muchow and Maya Buenaventura (2017), *Investing Early: Taking Stock of Outcomes and Economic Returns from Early Childhood Programs* (Rand Corporation).
- Cascio, E. (2023), 'Does universal preschool hit the target? Program access and preschool impacts', *Journal of Human Resources*, 58(1): 1-42.
- Dougan, W., J.L. Garcia and I. Polovnikov (2023), 'High-quality early childhood education at scale: Evidence from a multisite randomised trial', National Bureau of Economic Research Working Paper no. 31694.
- Duncan, G., A. Kalil, M. Mogstad and M. Rege (2022), 'Investing in early childhood development in preschool and at home', National Bureau of Economic Research Working Paper no. 29985.
- Fryer, R., S. Levitt, J. List and A. Samek (2020), 'Introducing CogX: A new preschool education program combining parent and child interventions', National Bureau of Economic Research Working Paper no. 27913.
- Garcia, J.L., J. Heckman, D. Leaf and M. Prados (2017), 'Quantifying the life-cycle benefits of an influential early childhood program', National Bureau of Economic Research, Working Paper no.23479.
- Heckman, J., S. Moon, R. Pinto, P. Savelyev and A. Yavitz (2010), 'Analyzing social experiments as implemented: A reexamination of the evidence from the HighScope Perry Preschool Program', *Quantitative Economics*, 1(1), 1-46.
- Heckman, J., R. Pinto and P. Saveley (2013), 'Understanding the mechanisms through which an influential early childhood program boosted adult outcome', *American Economic Review*, 103(6): 2052-86.
- Tseng, Y., Jordan, B., Borland, J., Clark, M., Coombs, N., Cotter, K., Guillou, M., Hill, A., A. Kennedy and J. Sheehan (2022), *Changing the Life Trajectories of Australia's Most Vulnerable Children – Report no.5: 36 months in the Early Years Education Program: An assessment of the impact on children and their primary caregivers*.
- United States Department of Health and Human Services (2023), '??'; accessed at: <https://eclkc.ohs.acf.hhs.gov/ersea/articulo/poverty-guidelines-determining-eligibility-participation-head-start-programs>

Van Huizen, T. and J. Plantenga (2018), 'Do children benefit from universal early childhood education and care? A meta-analysis of evidence from natural experiments', *Economics of Education Review*, 66: 206-22.

**Table 1: ECEC programs targeted at children from birth to 3 years from disadvantaged background**

	<b>Early Years Education Program</b>	<b>Abecedarian Program</b>	<b>Project CARE (with ECE)</b>	<b>Infant Health and Development Program (IHDP)</b>	<b>Perry Preschool program</b>
<b>1] Children in the trial</b>					
Entry age	Birth to three years; Participation with mother can commence at 6 weeks + Participation without mother present can occur from 3 months	From 6 weeks of age; Almost all commence attendance by 3 months of age	From 6 weeks of age; Almost all commence attendance by 3 months of age	On discharge from neonatal nursery	Three years of age (In initial wave also four years of age)
Cohort	Children assessed as having two or more risk factors as defined in the Victorian Department of Human Services 2007 <i>Best Interest Case Practice Model</i> , and be currently engaged with family services or child protection services and have	'High risk' infants from poor families (96% African American); All children were healthy, full-term babies with normal birth weights [Average IQ at entry to trial commencement = 95.] Three stages in selection:	Same as Abecedarian.	Infants who weighed 2500 grams or less at birth and were 37 weeks or less gestational age (Ballard examination) were screened for eligibility if they were 40 weeks postconceptional age during a 9-month period in	Children who are: 1] African-American; 2] Be disadvantaged as measured by parental employment level; parental education and housing density (persons per room); and 3] Low IQ at time of entry to study (IQ between 70 and 85 on

	early education as part of their care plan.	<p>1] Candidate families identified through screening social service agencies and local prenatal clinics (primarily North Carolina Memorial Hospital);</p> <p>2] Preliminary eligibility determined by a 'High-Risk Index' – Intended to determine risk of retarded cognitive development. Index was constructed using factors including household income, parental education, school histories of family members, welfare payments and parental occupations; and</p> <p>3] Final determination</p>		1985 and if they were born in one of 8 participating medical institutions. Must have lived within 45 minutes of a centre; No severe illnesses or neurological defects	<p>Stanford-Binet IQ test).</p> <p>Candidate families identified from families attending Perry Elementary school, neighbourhood referrals and door-to-door canvassing.</p>
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		made after mother interviewed and given a standardized intelligence test (Mean maternal IQ = 85 for participants in the trial.). Candidate families identified through screening social service agencies and local prenatal clinics.			
<b>2] Intervention</b>					
	2011 to 2018	1972 to 1982	1978 to 1985	1985 to 1988	1962 to 1967
Main details of intervention	1] Education and care model: • Care model is attachment-focused, trauma informed, which recognises the significance of respectful and responsive	1] ECEC approaches: Partners in Learning Strong focus on: • Language and reading through story sharing; • Social/emotional development;	1] Daycare program: Emphasized activities that support both the intellectual/creative domain and the social/ emotional domain of the child. Use Learninggames	1] Enrolment at a child development centre (from 1 to 3 years). Curriculum based on Abecedarian and CARE – Partners for Learning Program:	1] Curriculum is based on the principle of active participatory learning: Children and adults treated as equal partners in learning. Classroom is arranged and the day

	<p>relationships for every child's learning and development;</p> <ul style="list-style-type: none"> <li>• Education model pedagogically-driven reflective teaching model that is child-focused and aligned with national early learning guidelines;</li> </ul> <p>2] Multi-disciplinary model with an in-house infant mental health consultant as an integral team member;</p> <p>3] Individualised learning plan and relational pedagogical strategies developed for each child - 12-weekly shared learning and development goal</p>	<ul style="list-style-type: none"> <li>• Cognitive development;</li> <li>• Motor skills</li> </ul> <p>2] Planning, teaching and pace of interventions individualised; Systematic planning approach (eg., through regular formal and informal staff sessions);</p> <p>3] Home visits at 6, 18, 30, 42 and 54 months with trained observers. But no advice given to parent(s) on how to treat or interact with children;</p> <p>4] Adequate nutrition (Free milk formula up to 15 months; 2 meals and a snack from 15 months onwards);</p>	<p>for the First Three Years + Learninggames for Threes and Fours. Transportation to and from centre provided for families who needed it.</p> <p>2] Family education: Through person-to-person contact with a Family Educator. Usual duration from ½ to 1 hour. Designed to help the parent foster the cognitive and social development of the child: i] Problem-solving approach calling for the home visitor to encourage and promote parent problem-solving; ii] Curriculum using Learninggames.</p>	<p>Emphasises cognitive, social, motor and linguistic functioning. Transport to and from centre provided;</p> <p>2] Home visits (from birth to 3 years). Weekly when child is aged 0-1 year; biweekly 1-2 years. The home visitor provided health and developmental information and family support and implemented two specific curricula. One curriculum emphasized cognitive, linguistic, and social development via a</p>	<p>is scheduled to support children's self-initiated learning activities along with small-group and large-group activities. Teachers help children as they plan, carry out, and review their own activities;</p> <p>2] Teachers plan ways to engage children in numerous key learning experiences in child development covering the areas of personal initiative, social relations, creative representation, movement and music, logic and mathematics, and language and literacy. Emphasis on open-ended questions;</p> <p>3] Emphasis on teaching self-control and sociability;</p>
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	<p>setting for each child by families and educators;          4] 75% of daily nutritional needs of children met (in-house cook);          5] Actively engages with parents to encourage their continued participation, as well as to enhance their usage community services that could improve outcomes for their children;          6] Educators have 8 to 10 hours out of the classroom each week to undertake activities such as curriculum planning</p>	<p>5] Social service support to assist parents to improve their housing or obtain a referral for substance abuse programs;          6] Low cost or free primary health care;          7] Free transport to the centre each day [Intervention and control groups from preschool trial were randomised prior to kindergarten entry for entry to a 3-year elementary school intervention]</p>	<p>Home visits from one month after birth to 5 years of age – Average of 2.7 visits per month up to 3 years; 1.1 visit per month at ages 4-5 years.          3] Nutrition: Receive free iron-fortified formula for the first 15 months of age</p>	<p>program of games and activities for the parent to use with the child (Early Partners and Partners for Learning). The second curriculum involved a systematic approach to help parents manage self-identified problems.          3] Parent group meetings (child aged 1 to 3 years)</p>	<p>4] Maintenance of a consistent daily routine;          5] Teachers study and receive regular training in the educational model and receive support in its use from a supervisor who knows the model and assists in its implementation program including weekly home visits;          6] Weekly home visits to mothers to involve them in the educational process and to implement the curriculum with each child in their home.</p>
Duration	<p>50 weeks per year;          25 hours per week (5 days x 5 hours);          Up to 3 years</p>	<p>50 weeks per year;          7.30-5.30 each day;          Up to 5 years</p>	<p>7.30-3.30 (option to stay until 5.30) each day;</p>	<p>50 weeks per year;          20 plus hours per week; Up to 3 years</p>	<p>During school year (30 weeks); At least 2.5 hours a day 5 days a week each morning</p>

					+ a 1.5 home visit with mothers once a week; 2 school years at 3 and 4 years of age
Setting	Melbourne (Heidelberg); Single site childcare centre renovated for the trial	North Carolina; Single-site University childcare centre established for the trial	Rural county in North Carolina	8 medical facility sites selected after competitive review: Arkansas, Einstein, Harvard, Miami, Pennsylvania, Texas at Dallas, Washington, and Yale.	Ypsilanti, Michigan.
Staff	Educators: Bachelor E/C and/or Diploma EC level; Required to work full-time Family support workers: Degree level Senior infant mental health clinician/consultant (0.4 per week)	Educators: Certified EC teachers at minimum Bachelor degree level Remuneration, provision of PD and access to resources all higher than in mainstream childcare.	Educators: Mix of qualifications – Masters to high school graduates; Average of 7 years of direct educational experience.	Home visitors: College graduates with experience in undertaking home visits. Educators: 1 qualified early childhood education and 1 assistant teacher for each class. Supervised by Director with Masters level qualification.	Certified to teach in elementary, early childhood, and special education. Paid teachers public school salaries and added a 10% bonus.

Ratios of staff to children	1 adult to 3 infants 1 adult to 3 toddlers 1 adult to 6 preschoolers	1 adult to 3 infants (0-1 years); 1 adult to 4 toddlers (2-3 years); 1 adult to 5 preschoolers (4-5 years)	1 adult to 3 infants (0-1 years); 1 adult to 4 children (2 years); 1 adult to 6 preschoolers (3-5 years)	1 adult to 3 children (1-2 years); 1 adult to 4 children (2-3 years)	4 teachers for 20 to 25 children
Group size	Babies = 9 (under 15 months; 3 teachers) Toddlers = 9 (15 months to 3 years; 3 teachers) Preschoolers = 18 (above 3 years; 2 teachers)	Babies = 6 (2 teachers) Toddlers = 8 (2 teachers) Preschoolers = 10 (2 teachers) Older pre-schoolers = 14 (2 teachers)		1-2 years: 6 (2 teachers) 2-3 years: 8 (2 teachers)	

Sources: **EYEP**: Jordan and Kennedy (2019); **Abecedarian**: Ramey, Craig T. and B. Smith (1977), 'Assessing the intellectual consequences of early intervention with high-risk infants', *American Journal of Mental Deficiency*, 81: 319-24; Ramey, Craig T. and Frances A. Campbell (1984), 'Preventive education for high-risk children: Cognitive consequences of the Carolina Abecedarian Project', *American Journal of Mental Deficiency*, 88, 515-23; Campbell, Frances A. and Craig T. Ramey (1994), 'Effects of early intervention on intellectual and academic achievement: A follow-up study of children from low-income families', *Child Development*, 65: 684-98; Ramey, Craig, Albert Collier, Joseph Sparling, Frank Loda, Frances Campbell, David Ingram and Neal Finkelstein (1975), 'The Carolina Abecedarian project: A longitudinal and multidisciplinary approach to the prevention of developmental retardation' in Theodore Tjossem (ed.) *Intervention Strategies for High Risk Infants and Children* (University Park Press), pp, 629-65; **Project CARE (with ECE)**: Ramey, Craig, Donna Bryant, Joseph Sparling and Barbara Wasik (1985), 'Project CARE: A comparison of two early intervention strategies to prevent retarded development', *Topics in Early Childhood Special Education*, 5(2): 12-25; Wasik, Barbara, Craig Ramey, Donna Bryant and Joseph Sparling (1990). 'A longitudinal study of two early intervention strategies: Project CARE', *Child Development*, 61(6): 1682-96; **The Infant Health and Development Program**: The Infant Health and Development Program (1990), 'Enhancing the outcomes of low-birth-weight premature infants: A multisite randomized trial', *Journal of*

*the American Medical Association*, 263(22): 3035-42; Brooks-Gunn, Jeanne, Pamela Kato Klebanov and Fong-ruey Liaw (1995), 'The learning, physical and emotional environment of the home in the context of poverty: The Infant Health and Development Program', *Child and Youth Services Review*, 17(1/2): 251-76; Ramey, Craig, Donna Bryant, Barbara Wasik, Joseph Sparling, Kaye Fendt and Lisa LaVange (1992), 'Infant Health and Development Program for low birth weight, premature children: Program elements, family participation and child intelligence', *Pediatrics*, 89: 454-65; **Perry Preschool program**: Lawrence J. Schweinhart, David P. Weikhart (1981), 'Effects of the Perry Preschool program on youths through age 15', *Journal of Early Intervention*, 4(1): 29-39.