



# “Let’s Read”

## Literature Review

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# LET'S READ Program

## A LITERATURE REVIEW

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# A LITERATURE REVIEW

## 1. Introduction

This literature review was conducted at the beginning of the *Let's Read* program, funded by the Telstra Foundation and undertaken by the Centre for Community Child Health in partnership with The Smith Family Australia. The literature review describes the evidence base linking poor literacy to poverty and lower health and education outcomes. The literature review also outlines the research that has examined the impact of book reading in very early childhood in preparation for developing and acquiring language and literacy skills. Finally, the literature review synthesises the evidence base to inform the content and structure of a community based intervention to promote reading and language based activities within the family unit in aid of promoting the building blocks that facilitate later literacy success.

## 2. Language, Literacy and Child development

### 2.1. Child development

From the moment of conception a child's development progresses along a biologically predetermined pathway and yet all the while is responsive to the environment. Biology and environmental factors continue to interact as the developing child is exposed to crucial experiences, making vital connections and acquiring new skills and abilities.

Cognitive, sensory and motor development represent three obvious areas of observable change and a common gauge by which *normal* development is typically assessed. It is also during this same period that the acquisition of language must take place. Any complication in the development of language is likely to affect the child's development in other areas, most notably the acquisition of literacy. Although the act of becoming literate is considered to be one of the most important goals of early education in industrialised, technological societies (Adams, 1990; Finegan, Besnier, Blair & Collins, 1992), its acquisition differs from language though strongly influenced by language development. Unlike the biologically based skills of talking and walking, reading and writing depends on cultural transmission for its continued existence (Rayner & Pollatsek, 1989).

### 2.2. Brain development in early childhood

Halfon, Schulman & Hochstein (2001) acknowledge that brain development is the result of a complex interaction between nature and nurture and have presented a number of key findings that have "important implications for parenting, policy makers and efforts to support optimal brain development during early childhood" especially the finding that "a child's brain is changed by experience" (p. 2). Whereas brain centres that control critical survival functions such as breathing and heart rate are already sophisticated before birth, higher cortical functions that have to do with learning and memory are sculpted and modified by experience" (Halfon et al., 2001 p. 4). Gottlieb, Wahlsten and Lickliter (1998) similarly describe the brain as a "plastic self organising organ which develops and maintains nerve connections that are based on experiential demands and are not strictly predetermined". Learning is thus viewed as the process by which the brain responds adaptively to the environment in which a child is reared. Halfon et al (2001) describe the *use dependent* manner in which experiences that stimulate activity in particular regions of the brain facilitate the growth of connections in those regions. The implications of *use dependent* brain development surface in cases of extreme deprivation. Rutter (1998) and O'Connor, Rutter, Beckett, Keaveney and Kreppener (2000) examined institutionalised Romanian children who had been deprived of appropriate social interaction early in life and found that all children exhibited signs of severe developmental impairment prior to adoption. Interestingly, those

who were adopted prior to six months of age achieved nearly complete physical and cognitive catch up. Those adopted after six months of age showed significant catch up yet continued to show lasting cognitive and developmental impairment. These findings show that severe deprivation can sometimes have permanent negative consequences (Halfon et al., 2001).

The *timing of experience* is also acknowledged as a vital aspect in the development of the brain. Various regions of the brain become fully functional at different times and specific kinds of experience facilitate development in each region during that region's developmental period (Perry, 1997). Halfon et al. (2001) note that critical or sensitive periods for each developing region of the brain represents a window of opportunity which requires specific experiences and stimuli in order to promote the *use dependent* synaptic growth. It is also during this period that interventions thought to support brain development are likely to have the greatest impact (Halfon et al., 2001). A summary of the key findings in early childhood brain development highlights the enormous impact of early experiences and the irreversible consequences of under stimulating the brain during critical periods of development.

### 2.3. Language and Literacy Development

Language development provides an excellent example of the interactive work of biological and environmental factors. In an environment where language can be heard, children will "naturally develop oral language at the same rate and in the same developmental sequence" (Wake, Westerveld, Morton-Allen, Gallagher & Caldwell, 2003 p. 1). The biological predetermined perspective, proposes that "there is an innate propensity for language in human beings" (Garton & Pratt, 1998 p. 29). Explicit instruction is not necessary for the development of language but exposure to the stimulus is. Greenough, Black and Wallace (1987) note that "brain plasticity, that occurs during critical periods, enabling the development of vision and hearing and the capacity for language, has been called *experience-expectant*, because it is responsive to stimuli that are so common in human life that they are practically guaranteed to be available" (p. 540).

Despite its dependence on language, the acquisition of literacy is markedly different. Formal literacy is artificial in that its components (letters, words, punctuation symbols etc) were developed as a means of facilitating the use of language by capturing or symbolically representing the language. Literacy is accordingly thought to be *experience dependent* as it can be encouraged and influenced by experiences that may not be available to everyone (Whitehurst & Lonigan, 1998). The term literacy as defined for the purpose of this literature review, refers to the ability to *read* and *write* printed text. This definition is consistent with that used in other studies which report deficits in *literacy* as referring to the specific skill of *reading* and *writing* (Baker, 1999; Weiss et al., 1992; AMA, 1999; Weir, 2001; Hardy et al., 1997; Rowe & Rowe, 2002; High et al., 1999).

Research efforts have long been committed to articulating the distinguishing and complementary aspects of our innate propensity for language and our extrinsic necessity for literacy. Articulating this distinction is important, as it draws our attention to the primary objective of this current review, which is to identify which factors and activities influence long term literacy success.

Although the deliberate instruction of literacy usually begins when children commence compulsory schooling, research efforts have identified a number of key attributes that are evident in preliterate children who go on to find success in literacy but which are absent from those children who struggle in acquiring formal literacy. In identifying these attributes, efforts have subsequently focussed on developing methods to encourage or further develop these variables so that children are well prepared for the journey toward literacy.

#### 2.4. Emergent Literacy

The building blocks for success in literacy are laid long before pre-school begins. *Emergent literacy* is a phrase that was introduced by Clay (1972) and refers to the skills, knowledge and attitudes that are presumed to be developmental precursors to conventional forms of reading and writing (Sulzby, 1989; Sulzby & Teale, 1991; Teale & Sulzby, 1986) and the environments that support these developments (Lonigan, 1994). Independent and identifiable components or skill sets that predict later reading success, within an emergent literacy framework include:

- **Language abilities**; including *vocabulary*; both expressive and receptive (Snow, Burns & Griffin, 1998) *understanding narrative and story* (Wells, 1987), *being capable of explanatory talk* (Crain-Thoreson & Dale, 1992; Dickenson & Beals, 1994).
- **Letter identification/knowledge**; knowing the names and corresponding sounds of letters (Tizard, Blatchford, Burke, Farquhar, Plewis, 1988; Byrne Fielding-Barnsley, 1990; Scanlon & Vellutino, 1996; Lonigan, Burgess & Anthony, 2000).
- **Phonological awareness/sensitivity**; the ability to identify and manipulate sounds in spoken language (Goswami & Bryant, 1990; Lonigan, Burgess & Anthony, 2000), knowing Nursery Rhymes (MacLean, Bryant & Bradley, 1987; Bus & van IJzendoorn, 1999).
- **Conventions of Print**, including understanding writing functions (Teale & Sulzby, 1986; Hall, 1987), understanding “left-to-right, top-to-bottom direction of print on each page with print progressing from front to back across pages” (Whitehurst & Lonigan, 1998 p. 851; eg Clay, 1979b; Tunmer Herriman & Nesdale, 1988).
- **Literacy environments**; having favourite books (Weinberger, 1996), library visits (Sénéchal et al., 1996), number of books in the home (Sénéchal et al., 1996), other home literacy activities; shared book reading (Elley, 1989; Sénéchal et al., 1996).

Within the emergent literacy framework, Whitehurst and Lonigan (1998) provide further clarity by differentiating the acquisition of recognised literacy prerequisites. Operationally, Whitehurst and Lonigan (1998) propose that emergent literacy consist of two distinct domains; “inside-out skills” and “outside in skills”.

- **Inside-out skills**; pertain to the cognitive prerequisites resident within a child that are thought to support efforts in decoding the text. These skills include *phonological awareness* (the ability to identify and manipulate sounds in spoken language), *letter knowledge* (knowledge of the name and sound(s) attributed to the letter) and *knowledge of the rules of print*.
- **Outside-in skills**; take in a wider perspective and include environmental features that assist children’s understanding of the context in which the writing they are trying to read occurs. Skills within this set include *language* (semantic, syntactic and conceptual knowledge), *narrative* (e.g., understanding and producing narrative) and *conventions of print* (e.g., knowledge of standard print format; left to right, front to back orientation) (Whitehurst and Lonigan, 1998, p. 848).

Research supports the longitudinal continuity between individual differences in a number of recognised *emergent literacy* skills and reading outcomes (Whitehurst et al., 1999). For example a longitudinal relation between the extent of *oral language* and later reading proficiency has been demonstrated (Bishop & Adams, 1990; Butler, Marsh, Sheppard & Sheppard, 1985; Pikulski & Tobin, 1989; Scarborough, 1989; Share, Jorm, MacLean & Mathews, 1984). Individual differences in *phonological awareness* (sensitivity) are also related to the rate of acquisition of reading skills (Bradley & Bryant, 1983; Stanovich, Cunningham & Cramer, 1984; Bus & van den Broek, 1999; Lonigan, Burgess & Anthony, 2000), as too is *letter knowledge* (Jackson, Donaldson & Cleland, 1988; Lonigan, Burgess & Anthony, 2000). Evans et al. (2000) found that *phonological sensitivity* and knowledge of *letter names* and *letter sounds* predicted literacy scores in Grade 1 and 2 in an average demographic sample. Evans et al. (2000) concluded that *phonological sensitivity* and knowledge of *letter names* and *letter sounds* are reciprocally related in young children, “with higher levels in each leading to higher levels in the other” (p. 72). The great benefit in identifying prerequisite skills to literacy success, has been the corresponding identification of various activities that promote and strengthen these skills.

### **3. Literacy: Why is it important?**

To consider the benefits of being literate it is important to acknowledge the limitations of illiteracy and the factors, which mediate success and failure. Cognitive skill sets such as those that comprise literacy are an invaluable form of social capital, which directly impacts education, employment, income and health outcomes.

The most recent statistics available on literacy in Australia were gathered via the *Survey of Aspects of Literacy*; SAL (Australia Bureau of Statistics, 1997). Results indicated that almost half of Australians aged 15-74 (6.2 million people) have either *very poor* or *poor* prose literacy skills (20% *very poor*; 28% *poor*). Educational attainment was strongly related to literacy skill level such that fewer years of completed education corresponded with poorer literacy levels. A consideration of the measured areas of literacy (prose, document and quantitative) indicated that nearly 70% of people who failed to complete secondary schooling had *poor* or *very poor* prose skills. As might be expected, a relatively large proportion of people with bachelor degrees (44%) or postgraduate qualifications (54%) had *good* or *very good* prose literacy skills. A further examination of prose literacy skills found that the proportion of unemployed people with *very poor* literacy skills (30%) was considerably higher than that of employed people (12%). Literacy skills were also linked to duration of unemployment with over half the people unemployed for two years or more possessing *very poor* literacy skills, compared with about one quarter of those who had been unemployed for less than one year. An examination of labour market trends also indicated that those with higher literacy skills generally earn more. Some 63% of people with *very poor* prose literacy skills were in the two lowest income quintiles. An examination of social skills also indicated that approximately 70% of people with *very poor* literacy skills did not participate in social activities at least weekly compared with 43% of people with *good* literacy skills.

#### **3.1. Socioeconomic Status and Literacy**

Socioeconomic status (SES) is most commonly assessed by education, income and or occupation of individuals (Ostrove & Adler, 1998). National and international research and assessment initiatives identify reading failure as disproportionately affecting children from socioeconomically and or educationally disadvantaged homes and contributes to the propagation of the cycle of poverty (Freebody & Ludwig, 1997; ABS, 1997; Anastasiou, Hanes & Hanes, 1982; Needlman, Fried, Morley, Taylor & Zuckerman, 1991). In particular, poor literacy is linked to decreased productivity, high unemployment, lower earnings, and high rates of both welfare dependency, low self esteem, substance abuse and teenage parenting (Berlin & Sum, 1988; Stanley, 2001; Whitehurst & Lonigan, 2003). SES is also one

of the strongest predictors of performance differences in children at the beginning of first grade (Alexander & Entwisle, 1988). Prior to first grade, SES differences also exist in important developmental antecedents of reading, such as *letter knowledge* and *phonological processing* skills (Bowey, 1995; Lonigan, Burgess, Anthony & Barker, 1998). A synthesis of Australian literacy standards describes a relatively clear gradient relationship between literacy and SES, implicating poorer literacy levels among disadvantaged families.

### 3.2. SES Differences in Home Literacy Activities

Research indicates numerous pathways by which SES might influence reading behaviours and literacy levels, including the availability of literacy material in the home (e.g., books, alphabet blocks and fridge magnets and crayons) and home literacy activities and parental time constraints to engage in literacy activities. In addition “difference in goals for their children, or knowledge about the importance of shared reading for academic success and language skills” are also factors likely to vary as a function of SES (Karass, VanDeventer & Braungart-Rieker, 2003 p. 134). Whitehurst and Lonigan (1998) note the numerous studies that have reported vast differences in the pattern of book ownership and frequency of shared reading between lower versus higher SES families (e.g., Anderson & Stokes, 1984; Heath, 1982; Teale, 1986).

In a U.S. study McCormick and Mason (1986) found that 47% of public aid (welfare dependent) parents had no *alphabet books* in the home, compared to only 3% of professional parents. Adams (1990 p. 85) estimated that the typical middle class child enters first grade with 1,000 to 1,700 hours of one on one picture book reading, whereas a child from a low-income family averages just 25 hours. These findings provide greater clarity in explaining the consistent findings that place low-income families at greater risk of reading difficulties (e.g., Dubow & Ippolito, 1994; Smith & Dixon, 1995; Juel, Griffith & Gough, 1986), and slow in the development of language skills (e.g., Juel et al., 1986; Whitehurst, 1996). SES differences have also been reported in children’s *letter knowledge* and *phonological sensitivity* prior to school entry (Bowey, 1995; MacLean et al., 1987; Raz & Bryant, 1990) and these differences in *phonological sensitivity* relate to later differences in word decoding skills (Raz & Bryant, 1990).

### 3.3. Education

As the primary objective in early education and the means of ongoing education, literacy acquisition is the most obvious predictor of success at school. An estimated one in three children experience significant difficulties in learning to read (Adams, 1990) and those children who experience early difficulties in learning to read are unlikely to catch up to their peers (Baydar, Brooks-Gunn & Furstenberg, 1993; Stevenson & Newman, 1986; Tramontana, Hooper & Selzer, 1988). Similarly, Juel (1988) reported that the probability that children would remain poor readers at the end of the fourth grade if they were poor readers at the end of first grade was .88. In a similar vein, Hardy et al (1997) defined *average or better reading skills at 8 years* as one of six variables most predictive of education attainment. In Australia Rowe and Rowe (1999) also claim that disruptive behaviour problems at school (particularly inattentiveness) and poor achievement progress in literacy are “highly prevalent, costly, and resistant to intervention” (p. A20). Such findings again highlight how important it is for children to begin schooling prepared for the rigours of literacy, increasing the likelihood of increased years engaged in formal education.

Other recent studies not directly focussed on literacy also reveal links that may relate to achievement in the area. As Simons (2003) notes, with reference to the findings of the Innocenti Report 2002, “it is not possible to isolate single factors within learning systems to account for differences in educational outcomes” (p. 3). Rather a variety of factors should be considered with respect to students and their families.

### 3.4. Primary School Literacy Statistics in Australia

The National School English Literacy Survey (ACER, 1997a) reported the diversity of achievement in the primary school years. Table 1 below indicates the *reading* and *writing* results for Years 3 and 5 (ACER, 1997b).

**Table 1. Percentage of Students Not Meeting Reading and Writing Standards for Years 3 and 5**

	% Not meeting the Reading standard		
	<u>Year 3</u>	<u>Year 5</u>	<u>Differential</u>
Main Sample (Total)	27%	29%	+ 2%
Males	34%	35%	+ 1%
Females	23%	24%	+ 1%
High SES	12%	13%	+ 1%
Medium SES	28%	29%	+ 1%
Low SES	38%	53%	+ 15%
Indigenous	81%	77%	- 4%

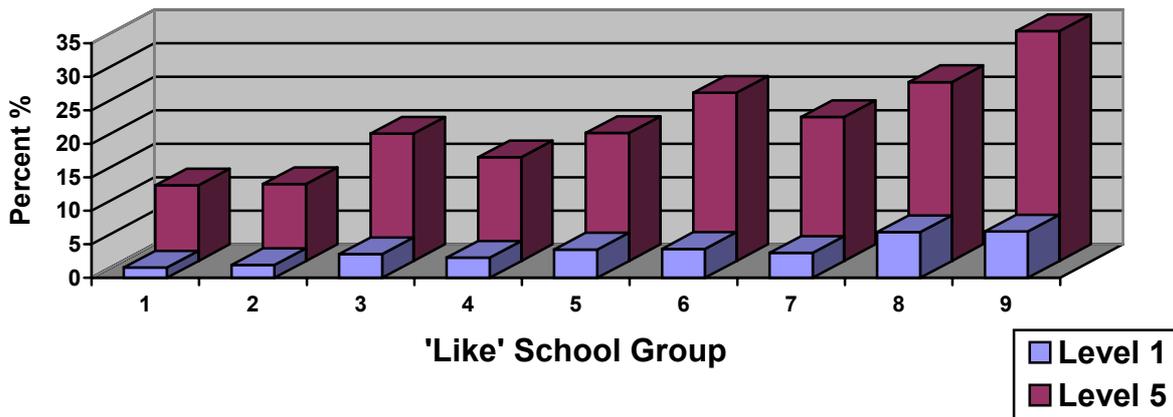
  

	% Not meeting the Writing standard		
	<u>Year 3</u>	<u>Year 5</u>	<u>Differential</u>
Main Sample (Total)	28%	33%	+ 5%
Males	35%	41%	+ 6%
Females	19%	26%	+ 7%
High SES	10%	19%	+ 9%
Medium SES	27%	33%	+ 6%
Low SES	30%	43%	+ 13%
Indigenous	71%	76%	+ 5%

Reading results indicated that nearly 30% of the nationally representative sample of 7454 Year 3 and 5 students failed to meet the respective Year-specific performance standard. Of more concern is the disturbing trend that emerged when results were considered by socioeconomic position. Immediately obvious is the gradient relationship between reading achievement and SES with Year 3 students from low SES being 3 times more likely to fall below the standard than their high SES peers. The results also indicate that children from high and medium SES families show a consistent standard between Years 3 and 5. However, children from low SES families showed a dramatic decline in achievement levels between Years 3 and 5 with a 15% increase in children failing to meet the performance standard in Year 5 compared to Year 3. The reality is that nearly 40% of year 3 students and over half of Year 5 students from low SES families failed to meet the performance standard as set by the National Schools English Literacy Survey (ACER; 1997b). Reading results of the special indigenous population illustrate a significant gap in achievement level compared with results of students in the main sample with between 77% of Year 5 indigenous students failing to meet the prescribed reading benchmark.

The results of students *writing* achievements are evidently different to the *reading* results as writing in essence is an expressive act rather than a recognition / comprehension task. The results are not dissimilar in terms of the trends but less dramatic in the disparity between SES categories. Over a quarter of the Year 3 (28%) students and a third of Year 5 (33%) students failed to meet the respective Year-specific performance standard for writing. A unique aspect of the writing results compared to reading results is the decline in achievement level when Year 3 is compared with Year 5 students. Reading standards showed a fairly consistent achievement level from Year 3 to year 5 in medium and High SES children (1% differential). However, writing achievement declined 9% for High SES and 7% for medium SES children between Year 3 to Year 5. Children from low SES families showed a similar decline in achievement levels between Years 3 and 5 with a 13% increase in number of children failing to meet the standard in Year 5 compared to Year 3. The most significant finding for the nationally representative main sample of students in the Survey was the broad ranging achievement standard among Australian school children at Years 3 and 5 (ACER, 1997b). The results also clearly indicated that students from low SES and indigenous families performed well below the prescribed Year specific performance benchmarks in Year 3 and 5. This is of particular concern given the many reports, which indicate that mastery of fundamental reading and writing skills by the end of Year 1 are essential if students are to make adequate progress during their primary years (Juel, 1988; Masters & Forster, 1997). The most recent results of the MCEETYA (2001) national student achievement benchmarks, which represent the minimum level of competence deemed necessary to allow meaningful participation in the school learning program, describes an ostensibly different achievement profile of primary literacy standards when compared to the ACER (1997) findings. While the variable achievement standard can be explained by differing benchmarks the 2001 MCEETYA results restate the difficulties faced by indigenous student with the report indicating that indigenous students are three times less likely to reach the Year 5 reading benchmark when compared to Australian students as a whole.

Efforts to address the discrepant achievement standards of primary students in Australian schools has seen an increase in the number of students referred to various extra curricular school based interventions such as *Reading Recovery* (Clay, 1979), the *Spalding Method* (Spalding & Spalding, 1990) and a variety of other school-family literacy programs. However, there is growing evidence to suggest that school based literacy interventions may engage children too late. The extent of the literacy divide becomes more apparent in an examination of Prep reading results. In a recent report published by the Victorian Department of Education, Employment and Training; *Quality Assurance in Victorian Schools - Benchmarks (1999)*, assessment results for Prep students indicated the same gradient relationship for achievement when examined against *Like School Group* (LSG). Schools are clustered into LSG's based on the proportion of students where a 'Language other than English' (LOTE) is the main language spoken at home and the proportion of *Education Maintenance Allowance* (EMA) / *Youth Allowance* (YA) recipients at the school (DEET, 1999).



**Figure 1. Percentage of Prep Students Reading at 50% or Below on Reading Level 1 & 5**

LSG categories provide an effective measure of SES with the lowest proportion of LOTE students and EMA/YA recipients in LSG '1' through to the highest proportion in LSG '9'. Figure 1 indicates the percentage of students who are reading at a standard of 50% or below on reading level 1 and 5. The results in figure 1 graphically display that even in the reception year of schooling, SES differences are already evident at the most basic reading level (level 1) and most pronounced at level 5. The Victorian statewide minimum standards for reading are

- 80% of students reading unseen texts with 90% accuracy at or above text level one by the end of their first year of schooling
- 100% of students reading unseen texts with 90% accuracy at or above text level five by the end of their second year of schooling (Text levels are based on Reading Recovery text levelling).

(Department of Education and Training, 2003)

The National School English Literacy Survey (ACER, 1997a) also provides a snapshot of the gender disparity in literacy achievement in Australian. Reading results from the survey indicated that 34% of Year 3 male students failed to meet the identified performance standard while 23% of girls fell below the benchmark. Year 5 reading results were relatively stable with a 1% increase in the number of students falling below the benchmark for both genders and a 10% achievement differential maintained between genders. Writing results were less stable with 35% of Year 3 male students failing to meet the identified performance standard, increasing to 41% by Year 5. While, 19% of Year 3 females fell below the benchmark, increasing to 26% by Year 5, an achievement differential of 15% favouring females. The most recent MCEETYA (2001) results also provide evidence of differences between male and female performance in reading and writing, with a greater proportion of girls in grades 3 and 5 achieving the benchmark level than boys (MCEETYA, 2001). More recently Makin (2004) reported evidence of a clear gender bias in *early literacy behaviours* (EBLs) among children (32-36 months) enrolled in a three-year early literacy intervention (prior to school aged). Results include 43% boys and 53% girls *accurately repeating words or sounds*; 43% boys and 50% girls *initiating writing*; 14% boys and 53% girls *scribbling from left to right*; 68% boys and 93% girls *initiate being read to* and 53% boys and 89% girls *looking at a book alone*.

Martino (2003) posits that “lower achievements in national test scores places the blame on the feminization of schooling” (as cited in Makin, 2004 p. 7). Cairney, Ruge, Buchanan, Lowe and Munsie (1995) similarly reported that the involvement of parents in school-family based literacy programs was strongly gender biased, with mothers representing the majority of participants, while virtually all participating school personnel who participated in programs were also women. Cairney et al. (1995, p. 36) further noted that programs were largely initiated, planned, run and coordinated by women for women and thus reinforce an already strongly established perception of literacy and learning as *feminized* activities. However, the results from Makin (2004) indicate that the gender disparity in literacy achievement is clearly evident well before children commence formal education. Various commentators have implicated the “paucity in male role models involved in reading and literacy related activities during children’s early years as a possible cause for the declining rates in literacy achievement for boys” (Fletcher & Dally, 2002 p. 4), even prior to school commencement.

### **3.5. Secondary School Literacy Statistics in Australia**

The main findings of the NSELS, reported in Mapping Literacy Achievement (ACER, 1997b), match existing research in demonstrating that there are differences in achievement according to SES and gender, and for students from a LOTE background. Analysis by the ACER of other data spanning 1975-1995 again indicates a decline in the percentage of 14-year-old boys attaining mastery of basic reading comprehension (ACER, 1997a). There has also been a widening of the gap between boys and girls, from a 3% gap in 1975 to an 8% gap in 1995 (ACER, 1997a). This study also showed that for students whose home language is not English, mastery was considerably lower than for other students, and that higher achievement in reading is associated with higher socioeconomic status.

Disparity in achievement among students of different demographic and socioeconomic groups is widely recognised as a significant problem (ACER, 1997a, ACER, 1997b, DEET, 1999). There is evidence that these disparities in achievement for different groups influence teachers’ expectations of students’ likely achievement, which in turn influences the learning opportunities available to students. Longitudinal data also indicates that boys with very low literacy and numeracy achievement have more than twice the chance of being out of work at the age of 19 than those with average to above average achievement (23 percent for very low achievers as against 11 per cent for high achievers) (ACER, 1997a).

### **3.6. Health**

Poor literacy levels can have a direct and indirect effect on health. Silverstein, Iverson and Lozano (2002) claim that illiteracy among children is a serious public health problem claiming that poor school performance can lead to grade retention and school failure. It is well documented that dropping out of school is, in turn, a risk factor for substance abuse, involvement in violent activity, teen pregnancy and other poor health practices (Silverstein et al., 2002). A recent study implicates a more direct effect of illiteracy on health highlighting the need to *read* and *understand* prescription bottles, appointment slips, and other essential health related materials (American Medical Association, 1999). Dietary behaviours, as a function of health, have long been established as risk factors for a number of chronic diseases such as cardiovascular disease and cancer (Giske, Turrell, Patterson & Newman, 2002). An inability to read and understand dietary related information on labels and decipher information presented in tables and graphs is yet another example of the impact that literacy has on consumer behaviour, which ultimately impacts health.

Numerous studies have also found that morbidity and mortality from diet related chronic diseases vary by socioeconomic position, with the highest rates being seen among people from disadvantaged backgrounds (Davey Smith & Brunner, 1997; Turrell & Mathers, 2000). Weiss, Hart, McGee & D'Estelle (1992) found that the physical health of subjects with extremely low reading levels was poor compared with that of subjects with higher reading levels even after adjusting for confounding sociodemographic variables. The American Medical Association in a report of the Council of Scientific Affairs also concluded that patients with inadequate health literacy reported worse health status and have less understanding about their medical conditions and treatment. Baker et al. (1997) also found that low literacy was also related to poor self reported health more strongly than were years of school completed among a sample of patients from two large urban public hospitals.

From this limited overview of the literature a predictable cycle emerges, placing children raised in low SES families at greater risk of inadequate literacy reception in early childhood. A poor foundation in literacy (prior to school entry) reduces the likelihood of success in literacy acquisition and increases the risk of disengaging from formal education. This, in turn, limits later employment opportunities, which is reflected in lower income levels, reduced access to health care, and less participation in social and recreational activities. As this summary highlights and acknowledges, a disparate group of factors have been shown to vary as a function of SES. The question is "can we improve literacy outcomes for disadvantaged children by promoting literacy (activities) during the years prior to school entry"?

#### **4. Literacy Promotion Activities**

Recognition of various developmental capacities that precede the acquisition of formal literacy have provided a significant breakthrough in promoting literacy success. Application of this growing knowledge base has allowed educators, clinicians and cognitive scientists to develop interventions, activities and curriculum resources that are aimed at strengthening children's abilities in specific areas. A key breakthrough has been acknowledging the *home* as the most practical venue for early literacy activities and *parents / caregivers* as the ideal facilitators for formal literacy acquisition. Accordingly, home literacy environments are believed to play an important role in language and literacy development (Evans, Shaw & Bell, 2000). Significant correlations have been reported between the home literacy environment and preschool children's language abilities. Sénéchal et al. (1996) reported that the number of books in the home, library visits and parents own print exposure was related to children's vocabulary skills. Children, 4 – 6 years (from low-income families) reported higher level of knowledge about the uses and functions of written language and more conventional concepts about print when higher levels of home literacy events were reported (Purcell-Gates, 1996)

##### **4.1. Shared Book Reading**

The most commonly cited home based literacy promotion activity, acknowledged as the likely aid to literacy success, is that of *shared reading* (also referred to as *shared book reading*, *reading aloud*, *story book reading*). The term defines the act of reading a storybook aloud to a child. The supposed benefits of shared reading have long been espoused, with the US based National Research Council even stating that "the single most important activity in building the knowledge required for eventual success in reading is reading aloud to children" (Anderson, Hiebert, Wilkinson & Scott, 1985 p. 23). Such claims paved the way for the UK and the US to develop nation wide interventions to promote shared reading from birth. The rationale that credits shared reading with such potency in anticipating literacy success is outlined by Sulzby (1985) who suggests that children learn to recognise words (read) through

repeated exposure, which in turn is achieved through repeated interactions around shared reading of storybooks.

Coltheart (2003 as cited in Wheldall & Cadzow, 2003) is critical of this view suggesting that reading is as complex a skill as playing the piano, highlighting the view that exposure to books, words and language is not of itself, enough. Recent empirical evidence bears witness to this view showing minimal impact between shared reading and later reading achievement. Studies certainly indicate a positive correlation between shared reading and later reading achievement but as a stand alone activity it is far from a panacea for children's literacy as once thought (Stahl, 2003). In two separate meta-analyses of the effects of storybook reading on later reading achievement, the amount of reading that parents did with their children accounted for approximately 8% of the variance in kindergarten and first grade (Scarborough & Dobrich, 1994; Bus, IJzendoorn & Pellegrini, 1995). Meyer, Stahl, Wardrop and Linn (1994) also found a positive correlation between shared reading, prior to school entry and school aged reading achievement but the activity alone was found to explain only 5% of children's achievement variance. Bloom (1976) noted that SES and mothers education level account for far more variance than shared reading but are more difficult to modify.

That shared reading is now acknowledged as accounting for less variance in later reading achievement than many earlier studies reported, is tentatively explained by Stahl (2003) who noted that survey design studies, utilising self report inventories, are confounded by social desirability which typically inflates time estimates of shared reading activities by parents. This is not to say that shared reading is bereft of any long-term benefit in the acquisition of literacy.

#### **4.2. Shared Reading and Vocabulary Acquisition**

The benefits of reading aloud to young children are most dramatic in the area of language development. Wells (1985) found that approximately 5% of daily speech of 24-month-old children occurred in the context of storytime. In a study of 41 two-year olds, DeBaryshe (1993) similarly found that mothers who began reading to their children earlier had children with greater receptive language abilities. The value of shared reading and print exposure has consistently been found to foster vocabulary development in preschool children (Elley, 1989; Sénéchal & Cornell, 1993; Sénéchal, LeFevre, Hudson & Lawson, 1996). Sénéchal and Cornell (1993) also showed that even a single storybook reading session appears to increase 4- and 5-year-old children's receptive vocabulary.

In a more recent study Evans et al. (2000) attempted to identify which literacy related activities (chosen by parents), influence children's skill acquisition during the beginning stages of reading. After accounting for child age, parent education and child ability, 'shared book' reading was found to make no contribution to the prediction of letter name and letter sound knowledge in kindergarten (Evans et al., 2000). However, *frequency of being read to* was correlated with *vocabulary scores*, *age of first being read to* and *age of regularly being read to* (Evans et al., 2000). Regular shared reading from a young age is positively correlated with vocabulary scores. These findings are also consistent with Whitehurst et al. (1994) who found that frequency of book reading at home influenced children's vocabulary development. Similarly, High et al. (2000) found in a study of children 18 months and older, significantly higher receptive and expressive vocabulary scores for children who were read to more frequently than children who were not. Mendelsohn et al. (2001) and Sharif et al. (2002) also reported similar findings indicating a clear link with frequent shared reading and vocabulary development. With a growing acknowledgment that children learn new word meanings by listening to stories (De Temple & Snow, 2003) it is important to consider the place of other language and literacy related skills which have been found to aid word recognition and later literacy success.

### 4.3. Phonological Awareness / Sensitivity

The link between the development of spoken language and the subsequent development of literacy has gained greater clarity with the acknowledgment of phonological (or phonemic) awareness. Phonological awareness refers to “children’s knowledge of the internal sound structure of spoken words” (Reyner et al., 2001 p. 37). Any empirical discussion around literacy acquisition and activities thought to promote the likelihood of literacy success cannot be separated from the topic of phonological awareness as it is now widely regarded as the most important predictor of reading in normally developing children (Rack, Hulme, Snowling & Wightman, 1994; Carroll, Elbro, 1996; Snowling & Stevenson, 2003). The theoretical link between *spoken* language and *reading* (at least within an alphabetic orthography such as English) is that at some point the child must become cognisant of the fact that written text represents sounds in speech. If a child is unaware of the distinctiveness of different sounds within the spoken language then it is unlikely that a child is going to move toward independent word recognition. Therefore, a child must at some point be directed to the fact that word identification requires an awareness of sounds represented by text and very few children ever make this connection alone. Evans et al. (2000) found that *phonological sensitivity* and knowledge of *letter names* and *letter sounds* predicted literacy scores in Grade 1 and 2 in an average demographic sample. Evans et al. (2000) concluded that *phonological sensitivity* and knowledge of *letter names* and *letter sounds* are reciprocally related in young children. While a number of excellent training courses have been developed to improve or assist in the development of phonological awareness (e.g., Byrne & Fielding-Barnsley, 1990) almost all have been developed for school aged children. However, there are a number of activities that can be implemented within a shared reading context that have been found to promote phonological awareness which include the use of *alphabet books*, *predictable books* and *rhyming books* (e.g., Dr. Seuss books). Although their value will depend largely upon the manner and style that children are engaged into the text and are supported in the exploration of the texts.

### 4.4. Book Selection

One of the key assumptions underlying any discussion around the benefits of shared reading is that the child is co-engaged in the activity with the person reading the text. Such an assumption directs our attention to two often overlooked but important aspects of shared reading, which is *book selection* and the *manner or style* in which a child is read to. Appropriate book selection is an important consideration in a shared reading context, as the book must engage the child’s attention. It is also true that a child’s book preference will change over time as they develop and acquire new interests and new skills. Evidence is now mounting to suggest that book selection can also assist children along the developmental pathway toward literacy success. Ideal books for babies intuitively leads to a preference for big, bright pictures of familiar objects with lots of colour and contrast. In reality, there is very little research on what type of book babies prefer. The preference lies more with parents and caregivers as the book simply provide them with a source to stimulate and engage their child. The focus for parents and caregivers is to make the experience enjoyable and fun while all along modelling the activity of reading. Stahl (2003) noted that the action of *fingerpointing* and the “ability to track print seems to be the nexus of storybook reading, alphabet knowledge, phonemic awareness and the development of word recognition” (p. 373). Therefore, modelling this simple action when a child is very young is likely to assist the child in understanding the *concept of print in text* (Morris, 1993) and the function of words regardless of the book.

A child will usually show a preference for favourite books around 10-12 months (assuming books have been a part of the child’s experience). But research findings inadvertently recommend two specific genres’ of children’s books that have been found to assist later reading achievement - *predictable books* and *alphabet books* (Stahl, 2003).

Predictable or patterned books “contain a repeated linguistic pattern that children can use to support their reading” (Stahl, 2003 p. 373). A number of studies have found that the use of predictable books in a shared reading context significantly improves sight word learning for first grade children (Bridge, Winograd & Haley, 1983; Johnson, 1998). It is also thought that the rhythm, rhyme and repetition of predictable books provide children with an opportunity to fine tune their sensitivity to the phonological level of words (syllables, onset and rime and initial and final phonemes) however this hypothesis awaits empirical support.

With such a clear emphasis now placed upon the importance of phonological awareness as a prerequisite to literacy success, a number of recent studies have examined the benefit of alphabet books as the genre of choice in a shared reading context for children prior to school entry. In an experimental study Murray, Stahl and Ivey (1996) found that reading alphabet books (emphasising the sounds of letters) to a group of at-risk 4-year-olds, significantly improved their phonemic awareness (awareness of individual sounds within words) indicating “some causal link between alphabet book reading and phonemic awareness” (Stahl, 2003 p. 372). Individual differences in *letter knowledge* are also related to the rate of acquisition of reading skills (Jackson, Donaldson & Cleland, 1988; Lonigan, Burgess & Anthony, 2000).

#### 4.5. Reading Styles

The style in which a child is read to has also proved to be an important variable within a shared reading context. Shared reading with babies initially relies upon an animated style of reading to engage and maintain a baby’s attention. This typically requires the parent or caregiver to interact with the book in a fun, playful and lighthearted manner, using different voices, and being sure to remain calm and relaxed. As the child continues to develop reading style takes on new significance. Reese and Cox (1999) randomly assigned forty-eight 4-year-olds to receive one of three reading styles over a six-week period (describer, comprehender, and performance style). A *describer* style focussed on describing pictures during the reading, a *comprehender* style focussed on story meaning and a *performance* style introduced the book and discussed story meaning on completion (Reese & Cox, 1999). Pretests and posttests measured children’s receptive, print and story comprehension skills and results indicated that those children exposed to the describer style resulted in the greatest overall benefits to the child. Brabham & Lynch-Brown (2002) reported similar findings in a study of 117 1<sup>st</sup> graders and 129 3<sup>rd</sup> graders where three styles were again compared (just reading, performance reading and interactional reading). The *interactional* reading style, which invited questions at any point during the reading, facilitated greater vocabulary gains than the *performance* or *just reading* styles.

Similar to the interactional reading style is a reading technique developed by Whitehurst et al. (1988) called *dialogic reading* which has generated much interest and forms the basis of an early intervention program developed to assist in language development. Two separate sets of techniques have been developed: one for children 2 to 3 years of age and the other for children 4 to 5 years of age (Zevenbergen & Whitehurst, 2003). The underlying intention of dialogic reading is to encourage the child to become the teller of the story over time “while the adult’s role is to prompt the child with questions, expand the child’s verbalisations and praise the child’s efforts to tell the story and label objects within the book” (Zevenbergen & Whitehurst, 2003 p. 178). Dialogic reading’ is described by De Temple and Snow (2003) as being based on three theoretical principles; “encouraging the child to become an active learner during book reading, providing feedback that models more sophisticated language and finally challenging the child’s knowledge and skills by raising the conversation to a level above their ability (p. 25 as cited in van Kleeck, Stahl & Bauer, 2003).

Evidence in support of dialogic reading suggests that the interactional reading style during shared reading further enhances language development. Hargrave and Senechal (2000) found that preschool children with poor expressive vocabulary skills averaging 13 months behind chronological age made significantly greater gains in the dialogic reading condition. Similarly, Wasik and Bond (2001) found that teachers who were trained to ask open-ended questions and to engage children in conversations about the book score significantly better on measures of receptive and expressive vocabulary. In a broader community based intervention study children's librarians at 4 branches of a city library taught parents the dialogic reading technique in two one hour sessions. Huebner's (2000) study design was an efficacy trial with two thirds of families randomly assigned to the dialogic reading condition and one third to a comparison condition. Results indicated that children, whose parents were taught the dialogic reading technique by librarians, made significant gains in vocabulary scores.

The benefit of dialogic reading has also been proved among low SES families. Valdez-Menchaca and Whitehurst (1992 as cited in van Kleeck, Stahl & Bauer, 2003) found that 2-year-old children who were exposed to a 7-week reading program while attending day care in Mexico yielded significant gains in expressive and receptive skills and linguistic complexity compared to children in a control condition.

#### **4.6. Summary of Empirical Findings**

A summary of results from research into shared reading indicates that as an activity on its own shared reading explains minimal variance in various outcome measures, including language growth, emergent literacy and reading achievement (Bus, van IJzendoorn & Pellegrini, 1995). However, what has been consistently proven is that shared reading has a significant and positive impact of vocabulary development (receptive & expressive), listening comprehension and understanding the conventions of print. With phonological awareness now widely regarded as the most salient predictor of reading success in normally developing children research efforts have recognised and developed a number of innovative and important strategies and tools in aid of promoting phonological awareness.

That shared reading is no longer burdened with the status of *universal remedy* to assure literacy success, has opened the way for a number of adjunctive shared reading strategies to gain recognition. Active parental help in the form of *increased book ownership, routine, frequency* and *style* of book reading, *fingerpointing*, and *interactive questioning* all contribute to further enhance the established language benefits of shared reading while also promoting a number of important literacy prerequisites. The selection of *predictable or patterned books* and *alphabet books* provides yet another opportunity for parents to engage their child in the activity of shared reading while also engaging them in the very important process of word identification and raising their awareness of how letters map onto sounds.

## 5. Early Literacy Interventions

Chronologically, literacy acquisition is surely the most important work of every young child. However, from the literature already presented it is apparent that many children struggle to make the important step in acquiring formal literacy skills of reading and writing as nearly half of all Australian adults have less than adequate literacy skills (Australian Bureau Statistics, 1997). As previously indicated, formal literacy acquisition depends on multidimensional influences (family, environmental and instructional) from a very early age in order to promote the many factors necessary for the development and subsequent mastery of literacy skills. Stanovich (1986) described the problems of early literacy acquisition in a seminal paper, which hypothesised that reading interest predicts future reading and amount of reading predicts future reading skills. Children who struggle with reading will dislike reading (Juel, 1988) and children who read less fall further behind. This phenomenon termed the *Matthew Effects* is tentatively explained by Reynolds (1991) and Wigfield and Guthrie (1997) as a function of interest and motivation and is said to start very early and grow stronger with time. The significance of this phenomenon is pertinent to this present discussion as many children who struggle to acquire adequate literacy skills already show deficits in important emergent literacy skills prior to school entry. The social pressure to succeed and the esteem draining effects of failing to achieve literacy combined with the obvious benefits that accompany success such as continued academic success implies a *critical period* in acquiring literacy.

Studies have repeatedly found that children who experience early difficulties in learning to read are unlikely to catch up to their peers (Baydar, Brooks-Gunn & Furstenberg, 1993; Stevenson & Newman, 1986; Tramontana, Hooper & Selzer, 1988). The probability that children remain poor readers at the end of the fourth grade if they were poor readers at the end of first grade is .88 (Juel, 1988). This places a renewed emphasis on *prior to school* activities and specifically literacy promotion activities. What has emerged from the research is the importance of intervention as a preventative measure rather than a treatment option. Timing is crucial to the implementation of any intervention and with the available evidence indicating that low SES children lose significant ground in relation to literacy acquisition even before school entry, early family interventions may be a key to promoting literacy success in school (Arnold & Doctoroff, 2001). This provides a sound rationale to argue that intervention needs to be implemented very early in the development of a child especially for children at higher risk of reading failure. The critical factor is determining the content, and components that should be included within an early intervention framework to facilitate the successful acquisition of literacy.

Many initiatives are being trialed to improve the likelihood of children receiving and mastering literacy skills and intervene with those who are recognised as *at risk* of failure. Unfortunately most formal literacy interventions are made available once a child has been identified as deficient in some aspect of the literacy spectrum. The timing of such assistance often means that a child has to play *catch up* and the accompanying complications of this style of intervention is detailed in the many discussions on the *Matthew Effects* (Stanovich, 1986).

With increasing recognition of the importance of the first three years of life (Newberger, 1997) especially in relation to brain development (Halfon et al., 2001) early intervention programs which propose to increase the likelihood of improved outcomes for children, are on the rise (McCain & Mustard, 1999; Vimpani, 2002). The Australian Language & Literacy Council (1995) state that the knowledge and experience that children bring to school is a key factor in literacy success. The significance of the home environment is fast becoming recognised as the venue of critical importance in promoting literacy activities.

To understand and examine the trends in early literacy interventions including the theoretical frameworks underpinning the contents, a number of early literacy interventions have been reviewed. All interventions reviewed here specifically target children prior to school entry. The first two interventions are facilitated, curriculum based programs while the remaining two models are book-distribution interventions.

### **5.1. Support at Home for Early Language and Literacies (SHELLS)**

SHELLS is a three-year early literacy intervention developed by education staff at the University of Newcastle (Makin & Spedding, 2002). The program is offered to all families within the specified regions in which the program operates. To date, it has been offered in two areas selected by the NSW Interagency Committee of educational and socioeconomic disadvantage. SHELLS was specifically developed with a particular emphasis toward children in rural and remote settings. After initial consultation, a home-based emergent literacy program was developed for families with children from birth to three years. By their own admission the innovators behind the structure and content of the program describe SHELLS as “an early literacy intervention designed to support children’s growth into literacy and to support parent/carers in their role as their children’s first literacy educators” (Makin & Spedding, 2002 p. 12). The authors boast of the flexible nature of the program with ongoing implementation determined collaboratively to meet parent needs and cultural practices. The program is flexible and evolving unlike other interventions, which rely on rigid, static compositions (Makin & Spedding, 2002). In relative terms, SHELLS offers ongoing support for up to three years, which extends well beyond traditional intervention time frames.

The program is structured around the appointment of a full-time facilitator with essential characteristics described as educational qualification (preferably early childhood), local community knowledge, acceptability and credibility within their community of practice and experience in working with children and families. The pattern of program delivery is based around intensive support to participants for approximately 40 weeks a year for up to three years. Contact type includes home visits, group meetings, telephone calls, community radio and newsletters. In the SHELLS evaluative report figures indicate that facilitators are responsible for approximately 40 children.

The SHELLS evaluation report (1997-2001) details the evolution of the program, participant numbers and attrition rates across the first three years of operation as well as a number of qualitative summary statements about selected outcomes. Due to the age of the participants no standardised psychometric tests were available to assess the development of emergent literacy abilities. Instead, ‘early literacy behaviours’ (EBL) were assessed using the ‘literacy wall’ which was developed for use in a separate early literacy intervention; ECLIPSE (Dept Education and Children’s Services; SA, 1997). Results from this assessment method provide little insight into the effectiveness of SHELLS as an early literacy intervention as no norm based assessment tools were used and no control groups were measured for comparative purposes.

Makin and Spedding (2002) note that the ‘focus on child outcomes’ is one of ten recommendations that will exhaust much of their evaluative attention from 2002 and onwards. This same recommendation forms a key criticism of the SHELLS evaluation report for two reasons. First, to intervene is to suppose that the intervention will benefit the recipient promote change and change is surely determined by outcome measures. Second, the authors recommend the need to focus on outcomes yet the program has been active for 4 years. The authors provide no reason for the absence of outcome measures in the first four years of the piloting phase of the intervention limiting evidence that the intervention actually makes a difference. A further limiting aspect of the evaluation report was the lack of examples of program content and the manner in how the content was delivered to aid parents in assisting the promotion of early literacy skills. The interaction between ‘content’

and 'delivery' is an important consideration especially in working with high risk families where parents are the primary agents for delivering the intervention content to their children.

In its favour, SHELLS is built upon a solid theoretical framework and offered to families over a three year period and is one of only a handful of facilitated early literacy interventions which focuses on engaging families. Evaluation material indicates not evidence that the program has been subjected to the rigours of randomised controlled trials to determine whether the program offers any significant benefits.

## **5.2. Home Instruction for Parents of Preschool Youngsters (HIPPY)**

The HIPPY program is an early intervention program set within a community development framework. Although HIPPY does not proclaim to be an intervention to solely promote literacy it does employ many activities that are thought to aid children in literacy acquisition. HIPPY is targeted at disadvantaged communities and is aimed at increasing the success at school of children living in educationally disadvantaged families, usually on low incomes. The HIPPY program was developed at the NCJW Research Institute for innovation in education at the Hebrew University of Jerusalem, Israel in 1969 and the Brotherhood of St Laurence established the first HIPPY program in Australia in 1998. The program is designed to empower parents as primary educators of their children in the home and foster parent involvement in school and community life to maximise the chances of successful early school experiences. In particular the HIPPY program is designed for parents of four and five-year-old children who want educational enrichment for their children with a particular emphasis on financially and educationally disadvantaged communities.

The content and activities unique to HIPPY are written in a structured format and are cognitively based, focusing on language development, problem solving and discrimination skills. The HIPPY manual contains 30 weeks of activities and 9 storybooks each year for two years. Parents and children generally spend 15-20 minutes per day together completing the activities. Parents are trained to use the curriculum through weekly visits with Home Tutors who are also parents in the program. Every fortnight, the Home Tutors role-play the activities with parents in the home. On alternate weeks, all of the parents and Home Tutors meet at the HIPPY site to role-play the activities as a large group, which is followed, by an enrichment activity. HIPPY provides training and support for parents including:

- A five day pre-service training for new program coordinators.
- Annual on-site training for new and established programs.
- Training sessions and professional development at the HIPPY Coordinators Annual Conference.
- Ongoing telephone consultation and support.  
(<http://www.hippyaustralia.org.au/index.htm>)

Like SHELLS, HIPPY employs a professional coordinator who employs a number of parents in each community as Home Tutors. Tutors are typically parents who are also enrolled in the program who implement the activity packets with their own child. Parents are visited fortnightly by home tutors who use 'role-play' with the parent to teach the weekly set of activities. The parent then spends approximately 15 minutes each day over the school year working through the activities with their child. On alternate weeks all the parents meet for 'parent group' meetings for the training, which is followed by an enrichment activity or workshop, the topics of which have been previously decided by the parents. Group meetings provide a space for parents to discuss any concerns they are having with their child, obtain information on local issues, child development and anything else that is important and relevant to parents in the community. An important feature of involvement in HIPPY is that group meetings provide an environment that fosters strong community links, friendships and helps to reduce the sense of isolation felt by many families in disadvantaged communities.

At the completion of the 2-year program a graduation ceremony is held where both parents and children receive various forms of acknowledgment for the effort and dedication. This event, shared with the local community, offers many parents an experience of being recognised as making a significant contribution not just to their child, but their family, the school and community.

The benefits of HIPPPY have been supported by a number of independent studies (Baker & Piotrkowski, 1996; Bradley & Whiteside, 1995; Cates, 1995; Gilley, Dean & Fan, 2001). The most recent Australia evaluation of the intervention was completed by Gilley, Dean and Fan (2001) who found that children who had completed the full two years in the HIPPPY intervention group scored significantly higher on all four standardised assessments compared to a matched comparison group. A separate group of children who had only completed one year of the HIPPPY intervention outperformed a matched comparison group on Teacher Assessment in Progress in Reading. In an American evaluation Cates (1995) also found that children who had participated in HIPPPY obtained significantly higher scores on tests of language and auditory skills, than children who did not participate in the program. While these results are promising HIPPPY advocates are keen for future research to recommend areas of improvement and for research to examine the efficacy of such changes. A further aspect of HIPPPY, which is not reported in the few available research reports, is the impact HIPPPY has within a community. HIPPPY is responsible for developing strong partnerships between families and engaging parents in their child's education and well being. Of course no assessment tool has been developed to look at the impact that a program like HIPPPY has in a community suffice to say that community development and community engagement are key achievements separate to the reported literacy success of HIPPPY.

### **5.3. Book Distribution Interventions**

Unlike the curriculum-based interventions, which are delivered over a number of years, 'book distribution' interventions seem to be catching on as a more cost effective model with obvious appeal and growing empirical merit. The logistics are simple and unlike the curriculum-based interventions such as HIPPPY and SHELLS, book distribution interventions have limited intellectual property concerns and provide a 'good fit' within existing community based organisations such as community health centres and libraries. To date, Australia has no State wide or National book distribution intervention in operation although a number of pilot programs have been trialed in local government areas. In contrast, the U.K. and the U.S. both boast national book distribution interventions and the development and evolution of these two respective programs provides important findings in reviewing the available early literacy interventions.

#### 5.4. BookStart

BookStart is an early literacy intervention that is delivered nationally in the U.K. The structure of the program is based around the provision of books for babies and guidance to parents with the aim of promoting 'shared book reading' between child and caregiver. Book consultant Wendy Cooling initially conceived the program in the UK and *BookStart* proper began in 1992 and in the first year of operation introduced 300 babies to books. Today, BookStart is the first national books for babies program that works through locally based organisations to give a free pack with books to babies and guidance material to parents and carers. It is presently estimated that the program reaches 90% of babies in the UK. Today, BookStart is a national scheme offering free books to every child and advice to every parent. The program is designed to encourage parents and carers to share books with children from a very early age and is based on the belief that it's never too soon to share books with babies and that children introduced to books at an early age start school with an advantage that can last throughout their life. BookStart is an inter-agency project, involving close co-operation between library services and health authorities. At the coalface BookStart distributes book packs to parents at the 7-9 month health check up.

A typical BookStart kit consists of the following:

- A canvas bag with the BookStart logo and the prominent strap lines 'Babies love books' and 'Libraries are for everyone', designed for use by parents.
- A guidance leaflet for parents has been designed as an easily accessible and reassuring introduction to sharing books. BookStart currently publish this leaflet in 14 languages and will be adding Albanian to this number shortly.
- Nursery Rhymes Place Mat. These place mats have been very popular with parents, librarians and with health visitors who value the finger actions as well as the rhyming text.
- A Story Book "*This Little Baby*" This is the first of three Campbell's books that will be donated to BookStart over the next three years as part of the 2 million books sponsorship agreement with Campbell's Books Direct.
- A second book in the pack is provided by one of BookStart's other publisher supporters. These publishers do not have their leaflets in the pack but are able to advertise their support for the BookStart program by linking with our web site and by over-printing their books.
- A book list is also included as well tips on sharing from librarians and health visitors but also from parents whose babies have enjoyed BookStart. The booklet is designed as a keepsake of a baby's first year of books.
- Each BookStart pack is personalised by information about how to join the scheme's own library. This is an invitation for families with babies and toddlers to come along and see how libraries have changed and what they have to offer nowadays.
- But the BookStart pack is actually only half the gift. The second part of the gift is the delivery of the pack by the health visitor and the invitation to join the library. The involvement of professionals in explaining the concept of book sharing is critical to BookStart realising it's potential.  
(<http://www.bookstart.co.uk/>)

Perhaps the most successful aspect of the BookStart scheme is the cooperative efforts that have linked libraries, health services, publishing companies and ongoing funding groups around a common agenda. BookStart have acknowledged this success and have recognised 7 key elements underpinning the ongoing success of the scheme. They include the defined role of an area coordinator, recognising the importance of communicating effectively with professionals, parents & carers, well developed administrative and logistic systems, the targeting of social exclusion, ongoing research and evaluation and a commitment to the future development of the strategy.

To date research efforts have provided pleasing results in support of the 'single injection' intervention. The National Centre for Research in Children's Literature was contracted to assess the initial impact and effectiveness of the Sainsbury's BookStart program from January 1999 to April 2001. The sample consisted of 75 families with a control group of 30. Before the BookStart intervention, 78% of respondents said that they were already reading books with their baby, but nearly half (47% of all those who completed the questionnaire) said that they read more after receiving the BookStart pack.

The percentage of parents reporting that they read with their babies rose from 78% to 91% after the BookStart intervention. The number of parents/carers who said they read with their babies every day rose from 47% (pre-BookStart) to 60% after the BookStart intervention. Wade and Moore (1998) have also reported on the benefits of the BookStart intervention as children arrived at primary school and took part in the base-line assessment in 1997. Result indicated that children who received the BookStart intervention were frequently ahead on assessment for speaking, listening and writing and performed better on mathematic assessments. These findings illustrate the advantages the BookStart children had compared with a similar group who had not received the BookStart pack.

The ongoing development of BookStart looks pleasing as a number of schemes have recently developed initiatives to reinforce the BookStart message with the gift of another book pack, referred to as a BookStart+ pack. The pack specifically targets toddlers from 18 to 30 months of age and includes additional materials including crayons and a scribble pad, again providing tangible equipment that will foster emergent literacy skills. Although ongoing research efforts continue to report positive outcomes from the BookStart intervention, there is still some question as to the absence of a randomised control trial to determine the benefits of the intervention.

## **5.5. Australia**

The successful implementation of BookStart in the UK has ignited great interest in Australia particularly within the public library sector as well as among municipal health service providers. Unlike the centrally coordinated national program in the UK, Australia boasts a variety of BookStart style projects, and to our knowledge are currently operating in Western Australia, South Australia, Victoria, New South Wales, Queensland, and the Australian Capital Territory. In Victoria, Moreland Council, which is situated in Melbourne's inner north lays claim to being the first LGA in Australia to implement and evaluate an intervention, based on BookStart. Like the UK, the Moreland Reading project implemented a 'BookStart' style program to encourage parents within the region to read to their babies. The Library Service coordinated the distribution of BookStart kits (via post) to every new baby born in Moreland over a 12-month period. Maternal and Child Health Nurses also distributed BookStart kits during the first child health check up with parents of newborn children (within the first two weeks of the child's birth).

Staff overseeing the Moreland BookStart program maintained a close connection with the local library as much of the focus of the intervention was promoted in accordance with the broader community-based reading campaign of which BookStart was one component. Evaluation of the year long trial was again limited by the design (survey) and short-term funding (12 months) which prevented ongoing follow-up and the chance for any norm based outcome measures being gathered to assess children's language/literacy skills to determine possible gains. However, results that were gathered certainly suggest that parental attitudes toward reading and awareness of the importance of reading to their babies to assist language development and bonding increased as a result of the intervention.

Overall the program distributed 900 books bags to parents with children born in Moreland in the specified 12-month period. Of this number 25% of recipient families returned the survey evaluation forms. Of this number 90% of parents indicated that they had read the accompanying guidance booklet and 80% indicating that they had read the storyboard book to their babies. The guidance booklet; "Reading is forever", proved to be a useful addition to the book bag as 87% of respondents indicated that the booklet taught them more about the importance of reading to babies and a further 82% indicated that the booklet provided new ideas about reading to their babies. Perhaps the most encouraging feedback that the evaluation reported was that 35% of respondents indicated that they began reading to their babies for the first time and an additional 60% began reading to their babies more often. Reasons listed that prevented parents from reading to their babies more often included; lack of time (39%), that the baby is too young (31%), and that the baby wont sit still (19%). A key limiting factor in the Moreland BookStart project was the number of residence that were from non-English speaking backgrounds (14%) which is particularly significant give that many children from NESB families are at higher risk of failing to acquire functional literacy. Criticism of the evaluation include the evaluation survey form (which assumes adequate literacy skills) limited many NESB families from providing feedback about the effectiveness of the intervention. It would seem that the most important feedback would be from high-risk families, which would include families with poor literacy levels and NESB families.

The Peninsula Community Health Service on Victoria's Mornington Peninsula has also recently set up a 12 month long BookStart program. The program *Babies Love Books Too* was initiated by two local speech pathologists however, the program proper is overseen and managed by Health Centre staff and distribution of book bags is handled entirely by Maternal and Child Health Nurses. Presently, no existing process for follow-up, tracking of progress and ongoing support is in place, limiting any formal evaluation of the intervention. Limited information about the accompanying verbal information conveyed to recipient families also limits our review. A similar limiting factor to the Moreland project is that the guidance booklet "guide for grown-ups" assumes *adequate* parental literacy, problematic for high-risk families who may have limited literacy levels.

Other BookStart style programs operating within Australia include *Babies Like Books Too* (BLBT) which is a South Australian based initiative presently being run out of Noarlunga Health Services. Similar to the Mornington Peninsula program, BLBT was also developed by a number of speech pathologists and was deemed a necessary project due to reports that parents did not recognise the influence of reading with babies from birth. A focus on encouraging parents to share books with babies from birth was seen as a way of promoting emotional bonding between parents and children, as well as reducing risks of language and literacy problems by exposure to pre-literacy activities (Telfer, 2002). BLBT was set up in a similar manner to other single injection 'book give away' interventions with staff sending out books with accompanying written educational material to all parents registering a new baby with their service during Children's Book Week in August 2000. A sixth month telephone follow up with 28 of the parent indicated that all families contacted were reading with their children. Of this number 40% were positively influenced to read with their child as a direct result of the book give away. The evaluation also found that parents were using strategies

outlined in the educational material. However, most parents were not attending story times with their children at the local library (which was promoted in the in the pack).

A number of inner urban communities have also developed book programs including Connect Redfern Community Centre (CRCC) in Sydney. One of the major issues apparent in Redfern and Waterloo is the extent of poor literacy within the community, particularly in the Aboriginal and the non-English speaking communities. Availability of children's books in many homes is limited or non-existent. While local schools respond to this need by implementing specific literacy programs within the classroom, CRCC recognised the need to tackle the issue prior to school entry in order for children to develop a strong foundation of literacy skills that may be built upon throughout their school years.

Connect Redfern Community Centre is attempting to address this issue by establishing a book distribution initiative called *Booktalk*, which was initially conceived in 2000. The initiative differs slightly to a typical "BookStart" program in that it involves the provision of pre-loved or second-hand books to local families, each book containing a leaflet with some basic information emphasising the importance of children's early literacy skills development. The books are being donated from schools, church groups, book suppliers and individual families. Books are then sorted and boxed into lots of 50 and supplied to local community centres, playgroups, General Practitioner offices and community events. When families visit their local community organisation, doctor, playgroup or participate in a community event they will be encouraged to select an age appropriate book to take home for each of their children. So far it is estimated that 8,000 books have been distributed through the community since the inception of this initiative. The initiative has grown to such proportions in 2003 that a decision was made to employ a parent for 3 hours per week to continue the initiative. To date, the program has not been evaluated.

At the time of reviewing existing programs no state wide intervention was in place. However, Western Australia are expected to commence roll out in early 2004 of "Better Beginnings" which is an early intervention family literacy program. Not dissimilar to BookStart it aims to provide positive influences for children in their first three years of life by working with both children and their parents, by providing a crucial early base for lifelong literacy, success in formal schooling and improved life chances. The program has been developed by Public Library Services Directorate, at the State Library of Western Australia. When established, this program will be considered a first of its kind in Australia.

Long-term, the program aims to cover a five-year period during which time a comprehensive evaluation process will be undertaken by Edith Cowan University's School of Education. In 2004, stage one of the program will be run to establish and evaluate the program, paving the way for this state wide initiative. A key objective of the program is to strengthen public library services to better meet the needs of the community.

## 5.6. Reach Out and Read

The other major book-based intervention is based in the U.S. and makes use of an innovative 3-pronged model, which has been developed by a number of Boston Paediatricians. Built around an 'emergent literacy' framework; Reach Out & Read (ROR) has caused something of a revolution in paediatric health care in the U.S. Although the majority of research into literacy is typically conducted by educators, teachers, psychologists, speech pathologists and early childhood educators, ROR has been developed by and is delivered by Paediatricians.

The ROR model is a 3-component plan based around the use of the primary care paediatric visit to promote early literacy skills in at risk children from 6 months to 5 years of age. In short, ROR employs the premise that reading aloud to children is the single most important parental activity to prepare children to succeed in learning to read (Anderson & Stokes, 1984; Gottfried, Fleming & Gottfried, 1998). As an intervention the first component proposes that paediatricians be initially trained to give anticipatory guidance to parents at health supervision visits about the importance of reading aloud to their children. The second component requires the doctor to provide a new book to each child at each visit. The third component typically sees volunteers reading aloud to children in waiting rooms and modelling techniques for parents (Klass, 2002).

The simplicity of the model is appealing and a strong body of research to show that literacy promoting interventions by the paediatrician, including anticipatory guidance about the importance of reading to young children, coupled with an age appropriate book for the child, have a significant effect on parental behaviour, beliefs and attitudes toward reading aloud. In addition several studies have shown improvements in the language scores of young children receiving the intervention.

Needlman et al. (1991) reported that among parents in a primary care waiting room, those who had been given books and guidance were four times more likely to report loving reading aloud or doing it in the last 24 hours. High, Hopmann, LaGasse and Holly (1998) conducted a pre and post-test study looking at literacy orientation in families before and after ROR was implemented. Results indicated that there was approximately four times increase in literacy orientation (reading aloud as a favourite activity, or as a regular bedtime activity, or reading aloud more than 3 times a week) in the after group. In a randomised control trial Golova et al. (1999) reported that the odds of parents reading to their child at least 3 days per week were 10 times greater in intervention families compared with control families. A group of parents randomly chosen to receive ROR guidance and books had significantly higher literacy orientation compared to a control group (High et al., 2000). In this same study, children 18 months and older were also reported to have significant increases in language scores using modified a standard language assessment both for speaking and understanding (High et al., 2000). Mendelsohn et al. (2001) also reported that scores on a standardised vocabulary test were significantly higher in a clinic where the ROR was active. Language scores were 8.6 points higher for receptive language (understanding words) and 4.3 points higher for expressive (picture naming). A third study to examine language scores has also reported that receptive vocabulary scores were higher among children who were attending a ROR clinic than among children who were attending a clinic without ROR (Sharif, Reiber & Ozuah, 2002).

That High et al. (2000), Mendelsohn et al. (2001) and Sharif et al. (2002) reported improvements in language scores for ROR families is significant on a number of levels. First, it is important to be cautious in how success is defined in relation to outcome studies looking at the benefits of any early intervention literacy program like ROR. Reported attitudinal changes in parent and caregivers and increased book sharing activities in the home are excellent beginnings for promoting language and pre-literacy skills but all such claims are vulnerable to the notion of socially desirable responses. Language measures are much less vulnerable to such bias (Needlman, Klass & Zuckerman, 2002) and preschool language ability is a recognised predictor of later reading success (Snow, Burns & Griffin,, 1998). Needlman et al. (2002) accordingly supposes that “positive effects on preschool language skills (as shown by ROR) should translate into increased reading later on” (p. 52). Of course the litmus test for the ROR intervention is to examine how increased book reading activities and increased literacy orientation in the home translates into reading outcomes.

One of the key aspects of ROR is the manner in which the intervention is delivered. McFadden-Garden, Hazzard, & Celano (1996) make the point that “parents perceive health care providers as experts in not only physical health but mental health and normal child development matters as well” (p. 2). Because of this perception physicians become one of the first and often the primary source of information for parents who have developed psychological concerns about their children or simply want guidance regarding reasonable expectations for general development (McPhee, 1984). The giving of a book as part of the ROR intervention is accordingly conceived as a “specifically medical intervention, reserved for the primary care clinician who would thus be speaking of books in the context of health, safety and development” (Klass, 2002, p. 990). The success of ROR in the U.S. indirectly points to a system where much credibility rests on the professional status of the person delivering the content of an intervention. It is likely that a departure from the primary health care setting would inevitably change the entire way ROR is perceived and received by the general public.

As an intervention ROR has developed an instruction book and training manual to ensure a uniform mode of delivery. The manual also describes the process for starting a new program, and keeping them going, including draft letters and contact details of publishers and other book suppliers, volunteer involvement, funding ideas, and general assistance around marketing, evaluation and collaboration. Presently in the U.S. seed funding is provided to new ROR start-ups after which point sites are encouraged to employ the services of volunteers and implement fundraising activities. While there are many issues around fundraising Klass (2002) emphasises the enthusiasm of physicians in forming a critical mass that facilitated the spread of ROR and ownership of ROR by site personnel.

## 5.7. Summary of Empirical Findings

A consistent concern with the interventions reviewed here was the lack of empirical support underpinning the structure and content of programs. This criticism is not new, as De Lemos (2002) has criticised the manner, in which educational policy has been adopted in the absence of sufficient evidence base, suggesting the need for stricter quality assurance measures before adopting new theories and practices. De Lemos (2002) laments the departure from experimental studies and quantitative based assessment in exchange for sociological *descriptive methods* such as case studies and observational methods in evaluating the effectiveness of intervention strategies, teaching practices and different approaches to the teaching of reading.

While all interventions reviewed here share the common goal of assisting children in acquiring literacy skills there remains little consensus on an adequate definition of *literacy*. Definitional disparity has led to differing assumptions about literacy acquisition, which has accordingly influenced the content and structure of programs. A key factor underpinning much of the disparity in definition and practice is the diversity in stakeholders and the variety of disciplines recruited to the literacy acquisition cause (i.e., educational/teaching, cognitive/psychological, and medical/primary health care professionals). Such diversity brings with it varying approaches, promoting different aspects of literacy success, relative to discipline specific priorities. Teachers will assess and priorities the needs of a child very differently to a paediatrician and indeed to a speech pathologist or psychologist. This must surely be seen as a positive when all aspects are weighed in favour of the child's long term success. However, that different disciplines operate within different theoretical paradigms, promoting different priorities and employing different research methodologies becomes problematic when all interested parties seek to achieve the common goal such as literacy success.

Presently, interventions developed for *prior to school* aged children are limited by poor evaluation methodologies and the absence of norm based outcome measures limits the extent to which interventions can report conclusive findings or be effectively critiqued or improved upon. ROR is the only intervention reviewed here that has been subjected to randomised control trials in an effort to measure its effectiveness. The issue of evaluation seems to be a discipline specific issue and beyond the scope of this paper.

## 5.8. Conclusion

Currently, no single early literacy program lays claim to being the universal remedy to the challenge of long-term literacy success. Many programs have produced clear replicable findings in language growth and even increases in emergent literacy skills. However, few programs are able to provide empirical evidence of long term literacy success especially among disadvantaged communities. Many programs have focussed on promoting home based literacy practices and promoting activities connected to books and other literacy related material. While there is unquestionable value in promoting book based activities and other literacy practices within the home, there is still a lack of evidence to show the long term benefits in relation to literacy acquisition. There must be a clearer link in how the *activities* and *messages* of any proposed intervention program relate to the acquisition and development of formal literacy success.

Of the early literacy interventions programs reviewed, all acknowledge the importance of the *home environment* such that the content and activities of the various early literacy programs are easily delivered within the home setting. Equally, the facilitative role of parent(s) or primary caregiver(s) in the delivery of program content and activities has been universally acknowledged in the interventions reviewed. However, Fletcher and Dally (2002, p. 3) note a growing trend in criticism levelled at the term "parent participation" when typically it is only mothers who get involved (Nichols, 1994). The problem of using gender neutral language has been that studies which require parent involvement may mask important gender differences between mothers and fathers in their attitude and participation in literacy activities. Nichol's (2000) Australian study investigating mothers and fathers views about bedtime story reading revealed a gender difference in parent involvement in literacy activities. Similarly, Millard (1997) has reported that fathers appear less inclined to participate in conventional print related literacy activities. A decline in the percentage of 14-year-old boys attaining mastery of basic reading comprehension and a widening of the gap between boys and girls, from a 3% gap in 1975 to an 8% gap in 1995 (ACER, 1997a) places a renewed emphasis on shared parenting practices. Early literacy programs that invite parent participation are likely to be more effective when they develop strategies to engage fathers and male role models into early literacy activities and intervention frameworks.

The crucial role that parents can play in promoting literacy success seems to be a common feature of the programs reviewed here. However, the *way* parents engage with their children in an effort to assist them in developing literacy skills presents a number of other important considerations. For example the method by which the content of a program is delivered is important as many *manual based* programs will limit parents who have poor literacy skills. The complexity of activities and the degree to which measures are implemented to ensure that activities are being completed in the correct manner are a further problem for *manual based* programs as activities that are too complex or too specific may also become too difficult to explain and implement. Facilitated programs with full time staff overcome this issue as staff can train, supervise and provide ongoing input and feedback to parents so that activities are carried out successfully. Programs, which require frequent face-to-face contact with groups, trainers or facilitators, have the advantage of role playing activities and answering queries and concerns. Of course facilitated programs present a further problem in relation to sustainability, as ongoing funding must be secured to employ specialist staff.

The timing of *intervention* is also an important consideration as a number of studies have shown that deficits in emergent literacy skills are already evident in low SES children prior to school commencement (Makin, 2003; McCormick & Mason, 1986). Therefore, careful consideration must be given to implementing an intervention early enough so that children (especially high risk children) have the best chance at normal development in relation to the acquisition and development of emergent literacy and formal literacy skills.

The primary intention of book distribution interventions (e.g., ROR and BookStart) has been to increase the numbers of books in low-income households, increase the amount of time children are read aloud to daily and thereby increasing children's exposure to language and book interactions.

The success of BookStart and ROR in raising awareness about literacy among disadvantaged communities and the benefits of shared reading for language growth is now clearly established. However, the importance of shared reading in supporting early language and literacy development must not dismiss the significant body of research indicating a number of clear and definable prerequisites to literacy success. It may well be that certain prerequisites or predictors of literacy success are too difficult or too complex to operationalise and thus implement within an early intervention framework, or indeed too costly compared to the relatively simple activity of shared reading. It is interesting to note that existing studies fail to support a direct link between shared reading and growth in phonological awareness, which is now regarded as a primary precursor to reading success (Lonigan, Dyer & Anthony, 1996; Whitehurst, 1996). Frijters, Barron and Brunello (2000) have also found that home literacy is directly related to vocabulary (a language skill) but that phonological awareness mediates its relationship with written language (a literacy skill). Likewise, Whitehurst (1996) reported that the variable reflecting *inside out* skills (letter knowledge, phonological sensitivity and emergent writing) are the strongest predictor of reading at the end of first grade. What has surfaced, as vitally important in value adding to the activity of shared reading is the addition of *anticipatory guidance* outlining additional strategies that promote recognised emergent literacy skills. To this end we acknowledge the benefit of shared reading as a crucial activity in the journey toward literacy success but also acknowledge the critical importance of additional activities and strategies (fingerpointing, book genre, reading style) that have been found to promote later literacy success.

The recent research evidence suggests that we can improve future literacy outcomes for children in disadvantaged communities by promoting specific literacy-related activities during the years prior to school entry. Based on these findings, it is concluded that an early intervention program to prepare children to succeed in learning to read should include the following key components:

- *Shared reading* between child and parent/caregiver.
- Community wide *distribution* and or easy accessibility to age appropriate *free books*.
- *Professional involvement* to convey *guidance messages* and *model* shared reading practices to parents.
- Built upon an *emergent literacy framework*, which promotes emergent literacy knowledge skills and environments, including *language abilities*, *letter sound/name knowledge*, *phonological awareness* and *conventions of print*.
- *Community involvement* to assist in the sustainability of a community-based early literacy program.

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## **Literature search strategy**

### **Scope**

There were three aspects to the literature review that required consideration. The first was to describe the benefits of early reading / literacy for children. This review of the literature focused on describing the social, educational, health, emotional and psychological benefits. This aspect of the review also drew attention to the continuing problem of illiteracy in contemporary Australian society. The second aspect of the literature review, and the largest, focused on interventions that have been undertaken to promote reading / literacy to young children. This aspect of the literature review detailed outcomes and methods of interventions that have been trialed with children from 6 months to 5 years with the view of identifying key learnings. The third aspect of the literature review targeted work that prescribed cognitive prerequisites and key indicators for success in reading / literacy in preschool aged children.

The scope for this literature search was defined as:

- Describing literacy
- Defining emergent literacy
- Searching the literature for studies that have measured the benefits of early reading literacy for children.
- Searching the literature for studies that have measured interventions to promote reading / literacy
- Searching the literature for studies that define specific skill sets that promote and assist children in the learning of literacy/reading and that identify prerequisites for literacy/reading success.

### **Search Strategy**

The development of a search strategy was undertaken at the commencement of the project (July, 2003). In the first instance the project was broken down into a series of concepts that allowed for more defined and limited searches. The search included areas such as:

#### **Language:**

English

#### **Population:**

Infants

Children

Parents

(A limited search of the adult literature was also undertaken)

#### **Setting:**

Home

Community setting

School

Kindergarten / Preschool

Health service providers (Hospitals, Health Care Centres/Clinics).

#### **Outcome:**

Determinants of literacy/reading success both in interventions trialed and as isolated prerequisite factors.

#### **Study design:**

Surveys, cohort studies, intervention studies, evaluations

**Databases**

The literature search focused on peer reviewed publications, but included grey publications, in particular reports by government and non government agencies in relation to literacy promotion in Australia and internationally.

**Sourcing peer reviewed publications:**

Search strategies used these electronic databases: Medline, OVID, Psychlit

**Search engines for the world wide web**

The search engine used was Google.

**Efforts to identify unpublished data**

Communication via email and telephone was conducted with a number of senior researchers in the psychological, educational and speech pathology research fields.

**Identifying keywords**

Examples included:

Literacy, reading, emergent literacy, literate, reading routine, child, infant, parent, parent / child, socioeconomic status, books, book sharing, early intervention, literacy promotion, health, wellbeing,

**Analysis**

A preliminary literature search will summarise the state of literacy levels nationally and globally detailing the factors, which mediate success and failure in acquiring literacy skills. A review of a number of early literacy interventions will be summarised and a series of recommendations made proposing the means by which an early intervention literacy program might be developed and implemented in a local setting. A further review of prerequisite factors that predict or are associated with success in literacy will be completed with the aim of proposing additional components within the structure of the proposed intervention.

## Appendix 1: Summary Table of Early Childhood Literacy Interventions

Project	Target group	Starting Age	Length	Venue	Activities	Professional Training	Parent Resources
<b>SHELLS</b> Aus	-Rural + remote families. -Low SES	From birth	3 yrs	Home	-Learner dependent. -No fixed curriculum.	-Full time area facilitator is trained around package content.	<ul style="list-style-type: none"> <li>• Contact person (telephone calls).</li> <li>• Home visits</li> <li>• Group meetings</li> <li>• Community Radio</li> <li>• Newsletters</li> </ul>
<b>HIPPY</b> Aus	-Low SES -NESB	From 4.5 years or two year prior to school commencement.	2 yrs	Home + Group	-Homework activities, -Shared book reading.	-5-day pre-service training for volunteer coordinators. -Annual on-site training for new programs.	<ul style="list-style-type: none"> <li>• Manual</li> <li>• Books</li> <li>• Contact person (Tutor).</li> <li>• Fortnightly meeting between parents</li> <li>• Alternate week meeting with tutor.</li> </ul>
<b>ROR</b> (US)	-Low SES -NESB	From 6 months thru to 5 years.	4.5 yrs	Home & Hospital or Clinic	-Shared book reading. -Various activities during reading.	-Site specific coordinator to oversee all ROR activities as outlined from national office. -On-site and manual-based training for paediatricians and volunteers.	<ul style="list-style-type: none"> <li>• Verbal anticipatory guidance</li> <li>• Age appropriate book(s)</li> <li>• Bookmark(s)</li> </ul>
<b>BLBT</b> (Aus: VIC & S.A)	All "at risk" babies in health service catchment.	From pre-natal information sessions to 2 years.	One-off book bag. Ongoing community dissemination	Home, Libraries, Community Health Centres.	-Shared book reading.	-Single site intervention. No specific training developed. However, modelled on BookStart principles.	<ul style="list-style-type: none"> <li>• Calico bag</li> <li>• Book</li> <li>• Placemat</li> <li>• Local library info</li> <li>• Guidance leaflet</li> </ul>
<b>BookStart:</b> (UK)	-Low SES -NESB (All children in the U.K.)	1 <sup>st</sup> Health Child Check up.	One-off	Home	-Shared book reading.	-Site specific coordinator to oversee all BookStart activities as outlined from national office. -On-site and manual-based training for paediatricians and volunteers.	<ul style="list-style-type: none"> <li>• Calico bag</li> <li>• Book</li> <li>• Placemat</li> <li>• Local library info</li> <li>• Guidance leaflet</li> </ul>
<b>BookStart:</b> (Aus: VIC)	Municipality specific: all children born in the City of Moreland	From birth.	One-off	Home	-Shared book reading.	-No training required.	<ul style="list-style-type: none"> <li>• A book &amp; a list of recommended books booklet on how to develop your child's reading skills</li> <li>• parenting resources</li> <li>• A library brochure &amp; an invitation for babies to join the library</li> <li>• A leaflet on playgroups</li> <li>• A leaflet on the Moreland Toy Shed.</li> </ul>

## Summary Table of Early Childhood Literacy Interventions

Project	Professional	Funding	Scope	Outcome Measures	Evaluation Methodology	Reported Outcomes
<b>SHELLS:</b> Aus	Early childhood Educators.	State Government Grant	Regional	-Literacy activities as determined by interview.	-Case study -Surveys and interviews of parents.	-No control group or norm based measures taken.
<b>HIPPY:</b> Aus	Teacher, Social Worker or Community Development Worker.	Clients pay \$30/year in addition to recurrent funding sourced regularly from varying sources.	Targeted low SES and NESB suburbs	- <b>Who am I?</b> (De Lemos & Doig, 1999). - <b>Literacy Baseline Test</b> (Vincent, Crumpler & de la Mare, 1996). - <b>Behavioural Academic self Esteem</b> rating scale (Coopersmith & Gilberts, 1982).	-Participant observation of children, parents and tutors. -Interviews with parents, and program staff. -Between groups design	-Performing close to average of same aged peers despite coming from Low SES.
<b>ROR</b> US	Paediatrician and Paediatric Nurses.	Site specific fundraising required in addition to subsidised funding from national office.	National (US)	- <b>PPVT-III</b> (Dunn & Dunn, 1997). - <b>Receptive One Word Picture Vocab Test</b> (Gardener, 1985). - <b>Expressive One Word Picture Vocab Test-Revised</b> (Gardener, 1990). - <b>Child Centred Literacy Orientation</b> (High et al., 1999)	-RCT (prospective) --Surveys and interviews of parents.	-Increase receptive & express vocab scores. -Increase in parent reading to child and number of books in the home.
<b>BLBT</b> (Aus: VIC & S.A)	Speech Pathologists and Maternal Child Health Nurses (Librarians).	Organisational funding, Local council funding,	Regional S.A. (Onkaparinga Council area)	Qualitative data and verbal feedback	-Surveys and interviews of parents, project partners and agencies.	Reported increase in parents reading to children from an earlier age, increase in attendance at Storytime sessions, increase in promotion of the benefits of BLBT by project partners and agencies.
<b>BookStart:</b> (UK)	Maternal Health Nurse.	Site specific funding supported by subsidised national office funding.	National (UK)	- <b>SAT scores</b> -Home based literacy activities as determined by surveys and interviews of parents.	-Surveys and interviews of parents, project partners and agencies. - Non-randomised, between groups design.	-Increase in number of parents reading to child for the first time. -Increase in amount of reading.
<b>BookStart:</b> (Aus: VIC)	Maternal Child Health Nurse.	One-off 12 month Grant	LGA (Moreland)	-Home based literacy activities as determined by surveys and interviews of parents.	-Surveys and interviews of parents, project partners and agencies.	-Increase in number of parents reading to child for the first time. -Increase in amount of reading.